

U.S. Railroad Retirement Board
Enterprise Architecture Capital Asset Plan
For Fiscal Years 2005 - 2007

Introduction

The purpose of RRB's Enterprise Architecture (EA) is to develop and implement an evolutionary, high-performance information technology architecture aligned with our program/business goals that enables enterprise-wide data integration. RRB's Enterprise Architecture will enable us to provide a source of consistent, reliable, accurate, useful, and secure information. It will also support the effective delivery of services and benefits, and enable effective decision-making by agency personnel. The Enterprise Architecture supports RRB's overall strategic goals.

RRB's Enterprise Architecture Capital Asset Plan Overview

RRB's Enterprise Architecture Asset Plan identifies major acquisition areas that will contribute significantly to the achievement of RRB's Target Architecture in order to meet the agency's performance goals and the President's Management Agenda reforms. Below are the capital assets initiatives aligned with the enterprise architecture issues identified in the agency's Enterprise Architecture Strategic Plan for Fiscal Years 2003 through 2010. Also included is an electronic government (E-Government) service delivery initiative that is aligned with the President's Management Agenda reforms.

Infrastructure Modernization Initiative

The Infrastructure Modernization initiative reflects the agency's platform strategic issue identified in the agency's Enterprise Architecture Strategic Plan. The RRB's program functions are significantly automated, making information technology essential to achieving our mission.¹ The proposed infrastructure initiative is a critical component to ensure that the agency is able to maintain and enhance capabilities needed to meet our strategic goals which include providing excellent customer service while serving as responsible stewards of our agency's resources.

The proposed modifications will improve reliability, enhance performance, replace aging and non-supported equipment, and allow us to meet needed capacity requirements as well as position us to more easily adapt to future changes in infrastructure needs.

The following three components of this initiative comprise the core requirements needed to achieve the target Enterprise Architecture Platform strategy and will provide fundamental support in meeting the RRB strategic objectives: I-A to pay benefits accurately and timely, and II-C to ensure effectiveness, efficiency, and security of operations.

- **Data Center Infrastructure** – This project supports the upgrade and/or replacement of the principal components in the RRB's mainframe computer architecture, located in the RRB's national computer center. These components include mainframe computer hardware, data storage management, and mainframe software acquisitions and upgrades.

¹ Railroad Retirement Board draft Strategic Plan 2003-2008, p.5, Strategic Issues and Challenges

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- **Client /Server Software** – Client/Server software is a vital part of the modernization of the RRB infrastructure, central to providing a more user-friendly and efficient interface for RRB employees. This initiative replaces the individual workstation licenses with enterprise-wide licensing software, as well as acquiring new software products to improve reliability and enhance workstation performance.
- **Information Security** – An integral part of our target architecture is the assurance of the privacy, protection and integrity of the safeguards employed to protect security access to the RRB infrastructure. This initiative includes the necessary funds to address several areas of need identified in the agency’s annual Federal Information Security Management Act (FISMA) reviews.

RRB’s Modernization Blueprint Initiative

The RRB’s Modernization Blueprint initiative encompasses three of the strategic issues identified in the agency’s Enterprise Architecture Strategic Plan.

The challenges facing RRB as stated in the agency’s draft Strategic Plan for 2003-2008 highlight the quality and experience of our workforce as a major contributor to the agency’s success. We have developed a strong experience base with 88 percent of our employees having 10 or more years of service at the agency. Consequently, significant investments in training, procedures and tool utilization have been minimal in recent years. However, statistics indicate that 42 percent of our current workforce will be eligible for retirement by 2008. This fact can turn a major strength into a significant weakness without planned intervention and subsequent actions.

The Modernization Blueprint initiative proposes tangible solutions that will play a paramount role in knowledge transfer and reducing the dependency on technologies with a limited, shrinking experience base. It will also enable us to create a development environment that facilitates reuse, adaptability, and componentization. This will enable the RRB to more easily and consistently, transfer institutional knowledge to electronic forms. In addition, this initiative provides for the assessment of our information technology systems to identify cost effective solutions, as well as opportunities for inter- and intra-agency collaboration. This results in the identification of future efforts that will play a pivotal role in our target architecture effort.

The following three components of this initiative comprise the core requirements needed to achieve the target Enterprise Architecture: Database, Application Development and Legacy Asset strategies. This initiative will provide fundamental support in meeting the RRB's strategic objectives.

- **Database Management System Migration**
This project funds a migration from the current non-relational database environment to a relational database environment. This will be a multi-year effort, beginning with the research of migration tools and services. The RRB will then develop a plan for

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converting all our non-relational databases to relational databases. Once all databases are successfully converted, the next step will be to restructure and consolidate these databases to reduce redundancy and improve data accuracy and program execution.

- **Reengineering of the Application Development Environment**

This project funds a reengineering of our internal application development environment, moving us from a traditionally structured non-flexible mode of operation to a more responsive, rapid deployment mode that aligns specific types of requests with appropriate methodologies and procedures. This will be facilitated by the introduction and use of software and techniques to promote componentization, software modeling, quality control, targeted development methodologies and deployment of new project management and control software.

- **Identify Opportunities for Redesign/Consolidation/Interoperability and Collaboration of Legacy Assets**

The changes this project brings to RRB's environment prepare the agency for the redesign of select applications that were developed in the 1980's and are neither easily adapted for Internet use nor lend themselves to rapid development methodologies. The result of these efforts to unify and simplify our core systems will improve interoperability and flexibility of applications, decrease the time and cost to develop and operate E-Government applications, and improve our ability to collaborate with agency partners.

Metadata Repository Initiative

This project funds the development of a preliminary metadata repository within the RRB, as identified in the RRB's Enterprise Architecture Strategic Plan. The RRB is charged with integrating data from varied sources and mediums. Data sources include: railroad employers and employees; annuitants and beneficiaries; state agencies; and other Federal government agencies including the Social Security Administration, the Centers for Medicare and Medicaid Services, and the Department of the Treasury, specifically the Internal Revenue Service and the Financial Management Service. This initiative facilitates management of RRB data at an enterprise level. It will allow us to increase data integrity, accuracy, and quality, and provide the ability to associate data within and across business processes and from both internal and external organizational boundaries.

This initiative comprises the core requirements needed to achieve the target Enterprise Architecture Metadata Repository strategy and will provide fundamental support in meeting the RRB's strategic objectives.

Using various tools, integration broker suites, transformation engines and business process management, the RRB will create a new repository to hold previously un-automated integration metadata. The creation of a metadata repository will improve the agency's ability to share information more quickly and conveniently between the federal, state and local government agencies.

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E-Government Service Delivery Initiative

The RRB is committed to meeting the President's Management Agenda concerning expanded use of the Internet for services to citizens. This agenda item matches our goal to address our customer's needs and expectations, providing them with a range of choices for conducting business, including more Internet options that are private and secure.

This initiative is an integral part of our on-going effort to provide our customers with the capability to perform all core functions via the Internet. The completion of this initiative will aid us in furthering our goal to achieve the target Enterprise Architecture Application Development and Legacy Asset strategies. This initiative will provide support in meeting the RRB's strategic objectives.

This project funds the RRB initiative to expand electronic services to the public via the RRB Internet website. As the Railroad Retirement Act and Railroad Unemployment Insurance Act systems are redesigned as part of the "Modernization Blueprint" initiative, these Internet services will be implemented, adding online functionality along with appropriate privacy/security safeguards.

In addition, this initiative funds the continued expansion of a system being developed to meet the requirements of the Government Paperwork Elimination Act to develop procedures to permit private employers to store and file electronically with executive agencies forms containing information pertaining to employees. The RRB's Employer Reporting System will enable the RRB to efficiently and effectively process compensation and service reports submitted on various media in a variety of methods from railroad employers. It will expand services to railroad employers by providing online completion or transmission of all employer paper forms, providing an acknowledgement of receipt, filing status information, complete and timely information on processing results, testing capabilities and additional customer support. The goal of the effort is to reduce the reporting burden on businesses by taking advantage of commercial electronic transaction protocols.

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Summary of Initiative Costs

Capital Element	FY 2005	FY 2006	FY 2007	TOTAL
Infrastructure Modernization Initiative Data Center Infrastructure Client/Server Software Information Security	\$1,445,000	\$1,577,000	\$760,000	\$3,782,000
RRB's Modernization Blueprint Initiative Database Management System Application Development Legacy Assets	\$1,992,800	\$2,835,800	1,149,800	\$5,978,400
Metadata Repository Initiative	\$555,000	\$370,000	\$385,000	\$1,310,000
E-Government Service Delivery Initiative	\$955,000	\$660,000	\$590,000	\$2,205,000
TOTAL	\$4,947,800	\$5,442,800	\$2,884,800	\$13,275,400

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Project Name: Infrastructure Modernization Initiative

FY 2005	FY 2006	FY 2007	TOTAL
\$1,445,000	\$1,577,000	\$760,000	\$3,782,000

The Infrastructure Modernization Initiative provides agency-wide support at the desktop, systems and network levels. In order to support the enterprise architecture strategic initiatives, a variety of improvements to the agency's infrastructure are required.

The RRB needs to establish our future platform in order to either prepare legacy systems for retirement or re-engineering. Our current mainframe is reaching the end of its useful life and the current operating system support from IBM will end in fiscal year 2004. In fiscal year 2004, the RRB will replace its mainframe and operating system with a z-Series system.

In fiscal year 2005, the RRB will increase the mainframe size to support systems development conversion efforts from IDMS legacy databases to DB2. The estimated software maintenance cost will be an additional \$120,000 in fiscal year 2005 and in each subsequent fiscal year.

In order to enhance the processing power of the new mainframe we will need to add 144MB of cache memory to the Virtual Tape System at a cost of \$75,000 in fiscal year 2005.

A key element of our target architecture is to ensure infrastructure reliability. The current front-end processor that supports connections to the Social Security Administration, AT&T-IVR, Treasury, an SNA gateway server, and the AT&T Global Network was installed in 1993. This unit needs to be replaced with a new switching device to take advantage of advances in telecommunications capabilities at a cost of \$60,000 in fiscal year 2005.

Additional mainframe support will be needed in fiscal year 2006 for the database migration; the estimated cost is \$600,000. This support should be obtained at the end of the last quarter of fiscal year 2005 so that it will be in place for fiscal year 2006.

In fiscal year 2006 the RRB will need to increase the storage capacity on the Enterprise Storage System with an additional 3 TB of storage when the database migration effort will begin. The estimated cost is \$425,000.

Enterprise licensing of the RRB's key personal computer software is another key element of our target architecture. The proliferation of various versions of personal computer operating systems (Windows 95 through XP) as well as versions of office suite product makes it difficult for the RRB to realize the potential cost-savings achieved from enterprise licensing. Enterprise licensing would enable RRB to better leverage its IT resources by obtaining additional discounts. Other potential benefits include a more efficient deployment of software and other applications to bureaus and field offices, better management and deployment of network resources, and better management of the content that is sent over the network. Annual expenditures for this item beginning in fiscal year 2005 are estimated at \$225,000.

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Information security is an integral component of infrastructure reliability. In fiscal year 2005, at a cost of \$250,000 we plan to add:

- Secure email capabilities with outside entities,
- Secure two-factor logon for specifically required business processes for remote users,
- Enhanced content filtering software,
- Incident response tools, and
- PDA wireless security.

We propose in fiscal year 2006 at a cost of \$682,000 to develop an Enterprise Security Management System (ESMS) to provide all of the Information Technology Security Controls for the RRB. ESMS is a family of IT security technical controls to assist in maintaining the confidentiality, integrity and availability of all data on the RRB enterprise network, including the hardware/software components for an Intrusion Detection and Prevention System.

In fiscal year 2007 at a cost of \$190,000, we plan to add

- Forensic collection and analysis tools and
- Third-Party penetration testing.

We propose to update risk management and contingency plans to provide for secure online interactive information exchange, provide formally documented comprehensive security plans, and updated recovery and contingency plans.

Focused security training will be provided to personnel with roles and responsibilities for IT systems and continuing education for technicians whose responsibilities directly support security infrastructure.

	FY 2005	FY 2006	FY 2007	Total
Increase mainframe processing power	\$120,000	\$120,000	\$120,000	\$360,000
Upgrade VTS cache memory	\$75,000	0	0	\$75,000
Replace front-end processor	\$60,000	0	0	\$60,000
Increase Enterprise storage capacity	0	\$425,000	0	\$425,000
Additional mainframe support	\$600,000	0	0	\$600,000
Enterprise Software Licensing	\$225,000	\$225,000	\$225,000	\$675,000
Security Management System	\$250,000	\$682,000	\$190,000	\$1,122,000
Risk Management/Contingency Plan reviews and updates	\$50,000	\$55,000	\$150,000	\$255,000
Security Training	\$65,000	\$70,000	\$75,000	\$210,000
Total	\$1,445,000	\$1,577,000	\$760,000	\$3,782,000

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Project Name: RRB Modernization Blueprint Initiative

FY 2005	FY 2006	FY 2007	TOTAL
\$1,992,800	\$2,835,800	\$1,149,800	\$5,978,400

Database Management System

In addition to concerns over the long-term viability of the RRB's current database management system (DBMS), its non-relational structure imposes limitations on application development options. This has forced us to seek relational database alternatives. The RRB recently installed two DBMS alternatives to IDMS: IBM's DB2, and a Microsoft SQL Server 2000 environment.

The conversion from the non-relational database management system to a relational database management system requires us to invest in contractual assistance, tools and training. The following types of tools are needed in fiscal year 2005: performance, migration, and buffer. In addition in fiscal year 2005, training is required on DB2 and the tools for IT staff and testers. In fiscal years 2006 and 2007, contractual assistance will continue and additional tools and training will needed to perform the actual migration and begin to work with the new databases.

Application Development

The evolution from one generation of application development to the next is made necessary by the greater demands of constituents for systems that wrap themselves around individual needs and provide integrated functions that can adapt as the needs change and evolve. The evolution to a new application development structure will not be easy. The next generation of applications will require new methods, architectures and technologies combined in new ways. In addition, they will need to coexist with well-established best practices. The biggest challenge for enterprises will be to manage the transition successfully.

The approach we plan to take with our modernization effort is a functional transformation. This approach includes the following:

- Program structure improvement – This can include for example, replacing “GOTO” statements with structured code or simplifying complex condition statements. This process identifies structural flaws repeated throughout a system and converting to an improved, cleaner design. Tools are available to help automate this process.
- Program modularization – This involves collecting related parts of a program into common modules. Modularization eases identification and elimination of redundant code, and simplifies interactions module to module and module to system. Modularization is also a major step in our incremental modernization project – modules are easier to replace with new components.

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- Data reengineering – This involves modifying the storage, organization, and format of data processed by legacy systems. This will be necessary due to the conversion from IDMS.

To support this approach we will require tools and training in the following areas:

- Project Management – A combination of project management training and tools for supervisors and project development leaders. Pricing indicates MS Project – Professional software for management and project leaders, and client access licenses for MS Project Server. Developers will use the Project web client.
- Visual Studio.NET – This development suite provides all of the products needed to develop MS.Net applications. We are planning to provide tools and training to 20 developers per year.
- Unified Modeling Language (UML) – UML is a standard methodology to promote requirements development, componentization, and software/data modeling. UML tools are provided with Visual Studio.NET.

Legacy Assets

Research and independent consultants have convinced us that reengineering of legacy assets should begin in fiscal year 2008, after the non-relational databases are migrated to relational databases. During the process of converting our databases to relational databases, we will identify opportunities for redesign and consolidation of our legacy assets.

The integration of these substantial legacy assets into an E-Government environment is a cause of great concern. The application paradigm of the past is very different from today’s approach.

	FY 2005	FY 2006	FY 2007	Total
Contractual Support	\$825,000	\$1,740,000	\$600,000	\$3,165,000
Tools	\$909,800	\$441,800	\$339,800	\$1,691,400
Training	\$258,000	\$654,000	\$210,000	\$1,122,000
Total	\$1,992,800	\$2,835,800	\$1,149,800	\$5,978,400

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Project Name: Metadata Repository Initiative

FY 2005	FY 2006	FY 2007	TOTAL
\$555,000	\$370,000	\$385,000	\$1,310,000

During fiscal year 2005, a Metadata Repository will be built to house descriptive data about the data housed in the Payment Rate and Entitlement History (PREH) database. This file was chosen due to its extensive documentation and the overall importance of the file as an agency data resource. From this effort, the Data Management Group will develop standards and protocols for metadata collection and recording. After analysis of the results of the PREH Metadata Repository development effort, teams will be assembled with contractual assistance to include other RRB data in the repository. Metadata normalization and reconciliation of apparent redundancies will take place during the metadata development effort.

The RRB will follow a strategy that calls for creating one, core repository to hold previously un-automated integration metadata for the major agency data stores and then relying on references to any in-place, dispersed metadata stores for the remaining details. This will result in little metadata duplication because only the dispersed implementation-specific tools (e.g., applications) hold detailed metadata for the message schemas, syntax, transformation maps and validation rules for the transactional information that is transmitted.

Metadata is one of the most critical success factors to the development of inter-governmental and internal data-sharing services. Metadata also is one of the biggest critical success factors to storing and maintaining information effectively.

The development of our metadata repository will be in full conformance with the Data Architecture described in the *E-Gov Enterprise Architecture Guidance (Common Reference Model)*. All of the data interoperability principles that are described will be met. The specifics may differ by the time we implement this project, since this is a rapidly changing field, but we will continually monitor the recommended data architecture to ensure compliance.

	FY 2005	FY 2006	FY 2007	Total
Repository tools (purchase/maintenance)	\$135,000	\$30,000	\$30,000	\$195,000
Tool training	\$20,000	\$20,000	\$20,000	\$60,000
Contractual support	\$400,000	\$320,000	\$335,000	\$1,055,000
Total	\$555,000	\$370,000	\$385,000	\$1,310,000

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Project Name: E-Government Service Delivery Initiative

FY 2005	FY 2006	FY 2007	TOTAL
\$955,000	\$660,000	\$590,000	\$2,205,000

This project funds the RRB initiative to expand electronic services to the public via the RRB website. As the RRA system is redesigned, these Internet services will be implemented incrementally, adding online functionality along with appropriate privacy/security safeguards.

Additional work will also be done on the employer reporting system whereby an employer covered under the RRA and RUIA can conduct all business with the RRB electronically, including filing required reports over a secure web site. Key features of this system are integration and consolidation of related functions; immediate feedback and a correction process for reported data that is not acceptable; and real time retrieval of information.

This initiative continues the implementation of the RRB's Government Paperwork Elimination Act (GPEA) strategy.

During fiscal year 2005, we plan to complete development of systems that allow railroad employees and spouses to file applications for a retirement annuities on-line. We also plan to complete development of interactive applications involving on-line entry of direct deposit and change of address information. Work will continue on the employer reporting system.

During fiscal years 2006 and 2007, we plan to develop interactive applications that would provide the option of filing on-line applications for the following survivor annuities: widow(er), mother/father, child, parent, and lump-sum death benefit. Finally, our plan also provides for the option of submitting certain supporting statements or questionnaires via these interactive applications. Also work will be completed or nearly completed on the employer reporting system.

	FY 2005	FY 2006	FY 2007	Total
Contractual Support – Retirement Application	\$495,000			\$495,000
Contractual Support – Survivor Applications		\$360,000	\$360,000	\$720,000
Contractual Support – Employer Reporting System	\$460,000	\$300,000	\$230,000	\$990,000
Total	\$955,000	\$660,000	\$590,000	\$2,205,000

Exhibit 53 Information Technology Portfolio
Railroad Retirement Board
Enterprise Architecture Capital Asset Plan
(in millions of dollars)
Appropriation /Funding Source: OMB 446-00-8011/60-8237-0-7-601

Code	Entry	Total Investment			Percentages		Homeland Security	DME			Steady State		
		FY 2003 BA	FY 2004 BA	FY 2005 BA	Financial	IT Security	Priority Identifier	FY 2003 BA	FY 2004 BA	FY 2005 BA	FY 2003 BA	FY 2004 BA	FY 2005 BA
	IT Resources Summary												
446-00-00-99-01-9999-99-112-081	Total, Major Projects	0.000	0.000	4.948	0%	6%	—	0.000	0.000	4.948	0.000	0.000	0.000
446-00-00-99-02-9999-99-112-081	Total, Non-Major Projects	0.000	0.000	0.000	0%	0%	—	0.000	0.000	0.000	—	—	—
446-00-00-99-99-9999-99-112-081	Total Railroad Retirement Board Investment Portfolio - Sum of Parts 1,2,3 and 4	0.000	0.000	4.948	0%	6%	—	0.000	0.000	4.948	0.000	0.000	0.000
	Part 1. IT Systems by Mission Area												
	Mission Area 1: Financial Management												
446-00-01-01-00-0000-00-112-081	Major Project Name: None												
446-00-01-01-01-9999-99-112-081	Total, Major Projects for Mission Area 1	0.000	0.000	0.000	0%	0%	—	0.000	0.000	0.000	0.000	0.000	0.000
446-00-01-01-03-0000-00-112-081	Non-Major Project Name: None	0.000	0.000	0.000	0%	0%	—	—	—	—	—	—	—
446-00-01-01-03-9999-99-112-081	Total, Non-Major Projects for Mission Area 1	0.000	0.000	0.000	0%	0%	—	—	—	—	—	—	—
446-00-01-01-99-9999-99-112-081	Total for Mission Area 1 - Financial Management	0.000	0.000	0.000	0%	0%	—	0.000	0.000	0.000	0.000	0.000	0.000
	Mission Area 2: RRA/RUIA Benefit Programs												
446-00-01-02-00-0000-00-112-081	Major Project Name: E-Government Service Delivery Initiative	0.000	0.000	0.955	0%	0%	—	0.000	0.000	0.955	0.000	0.000	0.000
446-00-01-02-01-9999-99-112-081	Total, Major Projects for Mission Area 2	0.000	0.000	0.955	0%	0%	—	0.000	0.000	0.955	0.000	0.000	0.000
446-00-01-02-02-0001-00-112-081	Non-Major Project Name: None	0.000	0.000	0.000	0%	0%	—	0.000	0.000	0.000	—	—	—
446-00-01-02-02-9999-99-112-081	Total, Non-Major Projects for Mission Area 2	0.000	0.000	0.000	0%	0%	—	0.000	0.000	0.000	—	—	—
123-00-01-02-99-9999-99-112-081	Total for Mission Area 2	0.000	0.000	0.955	0%	0%	—	0.000	0.000	0.955	0.000	0.000	0.000
446-00-01-99-01-9999-99-112-081	Total, Major Projects, Mission Areas 1 and 2	0.000	0.000	0.955	0%	0%	—	0.000	0.000	0.955	0.000	0.000	0.000
446-00-01-99-02-9999-99-112-081	Total, Non-Major Projects, Mission Areas 1 and 2	0.000	0.000	0.000	0%	0%	—	—	—	—	—	—	—
446-00-01-99-99-9999-99-112-081	Total, Part 1 - IT Investments for Mission Areas 1 and 2	0.000	0.000	0.955	0%	0%	—	0.000	0.000	0.955	0.000	0.000	0.000
	Part 2. IT Infrastructure and Office Automation												
446-00-02-02-01-0050-00-112-081	First Major Project Name: Infrastructure Modernization Initiative	0.000	0.000	1.445	0%	22%	—	0.000	0.000	1.445	0.000	0.000	0.000
446-00-02-02-01-0052-00-112-081	Second Major Project Name: Metadata Repository Initiative	0.000	0.000	0.555	0%	0%	—	0.000	0.000	0.555	0.000	0.000	0.000
446-00-02-02-01-9999-99-112-081	Total, Major Projects - IT Infrastructure and Office Automation	0.000	0.000	2.000	0%	0%	—	0.000	0.000	2.000	0.000	0.000	0.000
446-00-02-02-02-0001-00-112-081	Non-Major Project Name: None	0.000	0.000	0.000	0%	0%	—	—	—	—	—	—	—
446-00-02-02-02-9999-99-112-081	Total, Non-Major Projects - IT Infrastructure and Office Automation	0.000	0.000	0.000	0%	0%	—	—	—	—	—	—	—
446-00-02-02-01-9999-99-112-081	Total, Major Projects - IT Infrastructure and Office Automation	0.000	0.000	2.000	0%	16%	—	0.000	0.000	2.000	0.000	0.000	0.000
446-00-02-02-02-9999-99-112-081	Total, Non-Major Projects - IT Infrastructure and Office Automation	0.000	0.000	0.000	0%	0%	—	—	—	—	—	—	—
446-00-02-99-99-9999-99-112-081	Total, Part 2 - IT Infrastructure and Office Automation	0.000	0.000	2.000	0%	16%	—	0.000	0.000	2.000	0.000	0.000	0.000
	Part 3. IT Architecture and Planning												
446-00-03-02-01-0051-00-112-081	Major Project Name: Modernization Blueprint Initiative	0.000	0.000	1.993	0%	0%	—	0.000	0.000	1.993	0.000	0.000	0.000
446-00-03-02-01-9999-99-112-081	Total, Major Projects - IT Architecture and Planning	0.000	0.000	1.993	0%	0%	—	0.000	0.000	1.993	0.000	0.000	0.000
446-00-03-02-02-0001-00-112-081	Non-Major Project Name: None	0.000	0.000	0.000	0%	0%	—	—	—	—	—	—	—
446-00-03-02-02-9999-99-112-081	Total, Non-Major Projects - IT Architecture and Planning	0.000	0.000	0.000	0%	0%	—	—	—	—	—	—	—
446-00-03-02-99-9999-99-112-081	Total for Part 3 - IT Architecture and Planning	0.000	0.000	1.993	0%	0%	—	0.000	0.000	1.993	0.000	0.000	0.000
	Part 4. Grants Management												
446-00-04-02-01-0000-00-112-081	Major Project Name: None	0.000	0.000	0.000	0%	0%	—	0.000	0.000	0.000	0.000	0.000	0.000
446-00-04-02-01-9999-99-112-081	Total, Major Projects	0.000	0.000	0.000	0%	0%	—	0.000	0.000	0.000	0.000	0.000	0.000
446-00-04-02-02-0001-00-112-081	Non-Major Project Name: None	0.000	0.000	0.000	0%	0%	—	—	—	—	—	—	—
446-00-04-02-02-9999-99-112-081	Total, Non-Major Projects	0.000	0.000	0.000	0%	0%	—	—	—	—	—	—	—
446-00-04-02-99-9999-99-112-081	Total for Part 4 - Grants Management	0.000	0.000	0.000	0%	0%	—	0.000	0.000	0.000	0.000	0.000	0.000

Exhibit 300: Part I: Capital Asset Plan and Business Case (All Assets)

Date of this Submission: August, 2003
 Agency: U.S. Railroad Retirement Board
 Bureau: U.S. Railroad Retirement Board
 Location in the Budget:
 Account Title:
 Account Identification Code:
 Program Activity:
 Name of Investment: Infrastructure Modernization
 Unique Project (Investment) Identifier: 446-00-02-02-01-0050-00-112-081
(For IT investment only, see section 53. For all other, use agency ID system.) UPI should be created the same for all investments.
 Investment Initiation Date: 2005
 Investment Planned Completion Date: 2007
 This Investment is: Initial Concept ___ Planning X Full Acquisition ___ Steady State ___ Mixed Life Cycle ___

Investment/useful segment is funded: Incrementally ___ Fully X

Was this investment approved by OMB for previous Year Budget Cycle? Yes ___ No X

Did the Executive/Investment Review Committee approve funding for this investment this year? Yes X No ___

Did the CFO review the cost goal? Yes X No ___

Did the Procurement Executive review the acquisition strategy? Yes X No ___

Did the Project (Investment) Manager identified in section 1.1) review this? Yes X No ___

Is this investment included in your agency's annual performance plan or multiple-agency annual performance plans? Yes ___ No X
 NOTE: In the future, this investment will be noted in the agency's annual performance plan.
 Does this investment support homeland security? Yes ___ No X

If this investment supports homeland security, indicate by corresponding number which homeland security mission area(s) this investment supports?
 1- Intelligence and Warning;
 2 - Border and Transportation Security;
 3 - Defending Against Catastrophic Threats;
 4 - Protecting Critical Infrastructure and Key Assets;
 5 - Emergency Preparedness and Response; or
 6 - Other _____

Is this investment information technology?
 (see section 53 for definition) Yes X No ___

For information technology investments only:
 a. Is this project (investment) a financial management system?
 (see section 53.2 for definition) Yes ___ No X

If so, does this project (investment) address a FFMIA compliance area? Yes ___ No ___

If yes, which compliance area? _____

- b. Does this investment implement electronic transaction or record keeping that is covered by the Government Paperwork Elimination Act (GPEA)? Yes No
- If so, is it included in your GPEA plan (and does not yet provide an electronic option)? Yes No
- Does the investment already provide an electronic option? Yes No
- c. If the investment administers information in identifiable form about members of the public, was a privacy impact assessment submitted via PIA@omb.eop.gov with a unique project (investment) identifier? Yes No
- d. Was this investment reviewed as part of the FY 2003 Federal Information Security Management Act review process? Yes No
- d.1 If yes, were any weaknesses found? Yes No
- d.2 Have the weaknesses been incorporated into the agency's corrective action plans? Yes No
- e. Has this investment been identified as a national critical operation or asset by a Project Matrix review or other agency determination? Yes No
- e.1 If no, is this an agency mission critical or essential service, system, operation, or asset (such as those documented in the agency's COOP Plan), other than those identified as above as national critical infrastructures? Yes No
- f. Was this investment included in a Performance Assessment Rating Tool (PART) Review? Yes No
- f.1. Does this investment address a weakness found during the PART Review? Yes No

SUMMARY OF SPENDING FOR PROJECT STAGES									
(In Millions)									
(Estimates for BY+1 and beyond are for planning purposes only and do not represent budget decisions)									
	PY-1 and Earlier	PY 2003	CY 2004	BY 2005	BY+1 2006	BY+2 2007	BY+3 2008	BY+4& Beyond	Total
Planning:									
Budgetary Resources									
Outlays									
Acquisition :									
Budgetary Resources				\$1.325	\$1.457	\$.640			\$3.422
Outlays									
Total, sum of stages:									
Budgetary Resources									
Outlays									
Maintenance:									
Budgetary Resources				\$.12	\$.12	\$.12			\$.36
Outlays									
Total, All Stages:									
Budgetary Resources				\$1.445	\$1.577	\$.76			\$3.782
Outlays									
Government FTE Costs				\$1.328	\$1.293	\$1.240			\$3.861

Note: Government FTE costs shall include government personnel considered direct and indirect labor in support of this investment. This includes the investment management IPT and any other government effort (e.g., programming effort for part of the overall investment, development effort) that contributes to the success of the investment. The costs include the salaries plus the fringe benefit rate of 32.8%. Agencies should reflect estimates of the costs of internal FTE supporting an IT investment, and should at a minimum include in FTE estimates of anyone spending more than 50% of their time supporting this investment. Persons working on more than one investment, whose contributions over all investments would exceed 50% of their overall time, should have their specific time allocated to each investment.

I. A. Investment Description

I. A. 1 Provide a brief description of this investment and its status through your capital planning and investment control (CPIC) or capital programming "control" review for the current cycle.

This initiative is a key component of the RRB's Enterprise Architecture (EA) and associated EA Capital Asset Plan. The purpose of the RRB's Enterprise Architecture is to develop and implement an evolutionary, high-performance information technology architecture aligned with program and business goals that enable enterprise-wide data integration. It will ensure a source of consistent, reliable, accurate, useful, and secure information. It will also support the effective delivery of services and benefits, and enable effective decision-making by agency personnel. The Enterprise Architecture supports RRB's overall strategic and performance goals as well as the President's Management Agenda reforms.

The Infrastructure Modernization Initiative provides agency-wide support at the desktop, systems and network levels. In order to support the enterprise architecture strategic initiatives, a variety of improvements to the agency's infrastructure are required.

The RRB needs to establish our future platform in order to either prepare legacy systems for retirement or re-engineering. Our current mainframe is reaching the end of its useful life and the current operating system support from IBM will end in fiscal year 2004. In fiscal year 2004, the RRB will replace its mainframe and operating system with a z-Series system.

In fiscal year 2005, the RRB will increase the mainframe size to support systems development conversion efforts from IDMS legacy databases to DB2. In order to enhance the processing power of the new mainframe we will need to add 144MB of cache memory to the Virtual Tape System .

A key element of our target architecture is to ensure infrastructure reliability. The current front-end processor that supports connections to the Social Security Administration, AT&T-IVR, Treasury, an SNA gateway server, and the AT&T Global Network was installed in 1993. This unit needs to be replaced with a new switching device to take advantage of advances in telecommunications capabilities in fiscal year 2005.

Additional mainframe support will be needed in fiscal year 2006 for the database migration. This support should be obtained at the end of the last quarter of fiscal year 2005 so that it will be in place for fiscal year 2006.

In fiscal year 2006 the RRB will need to increase the storage capacity on the Enterprise Storage System with an additional 3 TB of storage when the database migration effort will begin.

Enterprise licensing of the RRB's key personal computer software is another key element of our target architecture. The proliferation of various versions of personal computer operating systems (Windows 95 through XP) as well as versions of office suite product makes it difficult for the RRB to realize the potential cost-savings achieved from enterprise licensing. Enterprise licensing would enable RRB to better leverage its IT resources by obtaining additional discounts. Other potential benefits include a more efficient deployment of software and other applications to bureaus and field offices, better management and deployment of network resources, and better management of the content that is sent over the network.

Information security is an integral component of infrastructure reliability. In fiscal year 2005, we plan to add:

- Secure email capabilities with outside entities,
- Secure two-factor logon for specifically required business processes for remote users,
- Enhanced content filtering software,
- Incident response tools, and
- PDA wireless security.

We propose, in fiscal year 2006, to develop an Enterprise Security Management System (ESMS) to provide all of the Information Technology Security Controls for the RRB. ESMS is a family of IT security technical controls to assist in maintaining the confidentiality, integrity and availability of all data on the RRB enterprise network, including the hardware/software components for an Intrusion Detection and Prevention System.

In fiscal year 2007, we plan to add

- Forensic collection and analysis tools, and
- Third-party penetration testing.

Our plans are to update risk management and contingency plans to provide for secure online interactive information exchange, provide formally documented comprehensive security plans, and updated recovery and contingency plans.

Focused security training will be provided to personnel with roles and responsibilities for IT systems and continuing education for technicians whose responsibilities directly support security infrastructure.

The Infrastructure Modernization initiative reflects the agency's platform strategic issue identified in the agency's Enterprise Architecture Strategic Plan. The RRB's program functions are significantly automated, making information technology essential to achieving our mission. The proposed infrastructure initiative is a critical component to ensure that the agency is able to maintain and enhance capabilities needed to meet our strategic goals which include providing excellent customer service while serving as responsible stewards of our agency's resources.

The proposed modifications will improve reliability, enhance performance, replace aging and non-supported equipment, and allow us to meet needed capacity requirements as well as position us to more easily adapt to future changes in infrastructure needs.

The following three components of this initiative comprise the core requirements needed to achieve the target Enterprise Architecture Platform strategy and will provide fundamental support in meeting the RRB strategic objectives: I-A to pay benefits accurately and timely, and II-C to ensure effectiveness, efficiency, and security of operations.

- **Data Center Infrastructure** – This project supports the upgrade and/or replacement of the principal components in the RRB's mainframe computer architecture, located in the RRB's national computer center. These components include mainframe computer hardware, data storage management, and mainframe software acquisitions and upgrades.

- **Client /Server Software** – Client/Server software is a vital part of the modernization of the RRB infrastructure, central to providing a more user-friendly and efficient interface for RRB employees. This initiative replaces the individual workstation licenses with enterprise-wide licensing software, as well as acquiring new software products to improve reliability and enhance workstation performance.
- **Information Security** – An integral part of our target architecture is the assurance of the privacy, protection and integrity of the safeguards employed to protect security access to the RRB infrastructure. This initiative includes the necessary funds to address several areas of need identified in the agency’s annual Federal Information Security Management Act (FISMA) reviews.

Status of investment in RRB’s Capital Planning and Investment Control(CPIC) Review Process

This investment will be proceeding from the select to the control phase of our Capital Planning and Investment Control process. The control reviews will ensure timely oversight, quality control and executive review and that the initiative is conducted in a disciplined well-managed and consistent manner. We will monitor established performance goals and quantifiable performance measures periodically reviewing and requiring updates to costs, schedule, benefits, risks, security and architectural compliance.

I. A. 2. What assumptions are made about this investment and why? These should be reviewed

The assumptions made for this investment are as follows:

1. The infrastructure modernization initiative will be consistent with the target Enterprise Architecture direction.
2. We will improve performance to better accommodate the changing business needs and improve response time.
3. Information systems interoperability will be established and maintained throughout the lifecycle of the project.
4. We will sustain reliable connectivity between employees, customers, partners and the enterprise information resources.
5. Key resources will be committed to the project.
6. Resources with multiple assignments will be trained and utilized when appropriate during each phase of this investment.
7. Authentication, security and privacy issues will be fully addressed.
8. Management attention will be provided due to project’s importance to the agency’s mission.

I. A. 3. Provide any other supporting information derived from research, interviews, and other documentation.

This investment was derived as a result of an agency-wide collaboration utilizing the architecture development effort that provided us with the rationale and strategy. Based on extensive collaboration of decision-makers throughout the RRB, research into industry (Gardner, Meta) best practices and adherence to the RRB’s IT objectives and architectural principles, the infrastructure modernization initiative was designed to provide the RRB with the foundation support needed to develop and implement the Target Architecture.

Issues of interoperability, collaboration and basic support services required for database and application redesign were studied. The dilemma of application redesign can be seen in the size of our legacy-installed base and the variety of hardware or software platforms we need to connect. The role of legacy OS/390 enterprise applications in this integration is critical. Enterprise computing is big computing, and that suits the mainframe’s traditional strengths. However, our current mainframe is reaching the end of its useful life and OS/390 support is questionable as the majority of IBM’s client base moves to z/OS platforms. In fact, IBM announced that it would stop new sales of the OS/390 on December 17, 2002. IBM has indicated that OS/390 support will continue to be provided at least through September 2004.

The introduction of the z800 Series in February 2002 has strengthened IBM’s case for the relevancy of mainframe computers in the Internet era. The z800 is priced to be competitive when performing equivalent workloads at equivalent qualities of service. The z800 with its 64-bit z/Architecture represents a major shift from the 31-bit architecture introduced more than 10 years ago. For compatibility with established applications developed for S/390, the z800 can also run in 31-bit mode. Application programs that ran in 31-bit mode on S/390 systems should run unmodified in 64-bit mode on the z800.

Gartner believes that the z800 system will have a reasonable useful life, is a significant commitment for IBM and will hold its value reasonably. They believe that users procuring a z800 could probably comfortably plan for a five-year useful life.

On the OS/390, the RRB makes extensive use of Computer Associates' IDMS/DC as its primary high-performance teleprocessing monitor. It is fully integrated with CA-IDMS/DB and provides a wide range of services to facilitate the development and execution of online transaction-oriented applications. To a lesser extent, the RRB also uses IBM's CICS. CICS Transaction Server (TS) is IBM's "flagship" online transaction processing (OLTP) application platform and has dominated the enterprise-class application platform. CICS TS continues to be one of the most scalable, secure and highly available application environments because of its deep integration with the underlying operating system, z/OS, and, in turn, z/OS's integration with the underlying hardware architecture, zSeries (formerly S/390).

Consequently, the following strategy was adopted:

- The RRB will commit to upgrading the RRB mainframe capabilities to the z800 series server, anticipating a useful life into 2010.
- The RRB will reduce the near complete reliance on the use of CA-IDMS/DC in favor of IBM-CICS wherever feasible.

I.B. Justification (All Assets)

In order for IT investments to successfully address support of the President's Management Agenda and justification of the investment, the investment should be collaborative and include industry, multiple agencies, State, local, or tribal governments, use e-business technologies and be governed by citizen needs. If the investment is a steady state investment, then an E-Gov strategy review is underway and includes all the necessary elements. If appropriate, this investment is fully aligned with one or more of the President's E-Gov initiatives.

I.B.1. How does this investment support your agency's mission and strategic goals and objectives?

This initiative is part of the overall Enterprise Architecture Strategy for modernizing IT service and delivery to the RRB mission areas. When completed it will deliver an evolutionary, high-performance information technology architecture aligned with RRB program/business goals that enables enterprise-wide data integration. The EA strategy will provide a source for consistent, reliable, accurate, useful, and secure information. It will also support the effective delivery of services and benefits, and enable effective decision-making by agency personnel. The Enterprise Architecture supports RRB's overall strategic goals.

RRB Strategic Objective II-C is "Ensure effectiveness, efficiency, and security of operations". The RRB is committed to effective efficient and secure internal operations. One of our strategic goals in this objective is to "Ensure the privacy and security of our customers' transactions with the RRB". The investments described in this request will strengthen and improve control and protection of information and will address the material weakness that has been identified in the area of computer security.

I.B.2. How does it support the strategic goals from the President's Management Agenda?

The RRB is committed to a number of management strategies that will guide our efforts to accomplish this initiative. These strategies can be categorized along the lines of the President's Management Agenda, which is designed to promote management improvement throughout the Federal government in five key areas.

RRB's Infrastructure Modernization Initiative directly supports two of the five key areas, Expanded E-Gov, and Competitive Sourcing.

The planned improvement in IT operations accomplished by this initiative will enable us to respond rapidly to changing business requirements, such as legislative changes and technological advances. It will facilitate our priorities in the coming years which include implementing a variety of E-Government initiatives within the framework of our overall information technology architecture, in a secure and stable electronic environment. Our focus will remain on simplifying the delivery of services and making it possible for our customers, businesses and government agencies to easily obtain information and service from the RRB. The outcomes of this initiative will help us to achieve these goals.

This initiative will also involve significant acquisitions and contractual services. The RRB's acquisition strategy supports the Competitive Sourcing guidelines of the President's Management Agenda. The agency is committed to meeting the Federal goals and objectives for competitive sourcing. Procurements related to this initiative will use competitive sourcing for acquisitions and services using GSA schedule buys, GWACS or firm fixed price.

I.B.3. Are there any alternative sources in the public or private sectors that could perform this function?

No, there are no alternative sources in the public or private sector that can provide the entire function for this initiative. Knowledge of RRB's security protocols and infrastructure design is needed for this function. Many of the tasks associated with this initiative are upgrades to existing software. We do plan to use COTS software and contractor assistance whenever appropriate.

I.B.4. If so, explain why your agency did not select one of these alternatives.

Not applicable, based on response to the previous question.

I.B.5. Who are the customers for this investment?

The customers for this investment are the RRB annuitants and unemployment and sickness claimants, covered railroad and rail labor employers, Board employees, and other agencies. The improvements in infrastructure and information security will give us an environment which supports more efficient and effective IT services and more protection of our customers' transactions with the RRB.

I.B.6. Who are the stakeholders of this investment?

The stakeholders in this investment include RRB's staff, rail labor, rail management, and other agencies.

I.B.7. If this is a multi-agency initiative, identify the agencies and organizations affected by this initiative.

This is not a multi-agency initiative.

I.B.7(A) If this is a multi-agency initiative, discuss the partnering strategies you are implementing with the participating agencies and organizations.

Not applicable, based on the response to the previous question.

I.B.8. How will this investment reduce costs or improve efficiencies?

The initiative will ultimately assist us in providing our customers with multiple service delivery options, including services provided over the Internet. This investment is also a critical step toward our target architecture, facilitating interoperability and collaboration across platforms and agency boundaries.

Finally, this investment enables us to begin conversion of our IDMS databases to relational databases. That conversion will reduce our dependency on aging technologies and systems.

I.B.9. List all other assets that interface with this asset. Have these assets been reengineered as part of this investment? Yes/No

The modernization blueprint, data management and e-government services interface with this investment. These assets will require reengineering. Funding for the reengineering of these assets is being requested separately.

I.C. Performance Goals and Measures (All Assets)

In order to successfully address this area of the business case, performance goals must be provided for the agency and be linked to the annual performance plan. The investment must discuss the agency's mission and strategic goals, and performance measures must be provided. These goals need to map to the gap in the agency's strategic goals and objectives that this investment is designed to fill. They are the internal and external performance benefits this investment is expected to deliver to the agency (e.g., improve efficiency by 60%, increase citizen participation by 300% a year to achieve an overall citizen participation rate of 75% by FY 2xxx, etc.). The goals must be clearly measurable investment outcomes, and if applicable, investment outputs. They do not include the completion date of the module or investment, or general goals, such as, significant, better, improved that do not have a quantitative or qualitative measure.

Agencies must use Table 1 below for reporting performance goals and measures for existing investments that were initiated prior to FY 2005. The table can be extended to include measures for years beyond FY 2004.

Table 1						
Fiscal Year	Strategic Goal(s) Supported	Existing Baseline	Planned Performance Improvement Goal	Actual Performance Improvement Results	Planned Performance Metric	Actual Performance Metric Results
2005	I-A Pay benefits accurately and timely II-C Ensure the effectiveness, efficiency, and security of operation	89 MIPS mainframe, 72MB VTS, IBM 3745 FEP	Increase mainframe processing power, add 144MB of cache memory to the Virtual Tape System, and replace front-end processor		100% implementation	
2005	I-A Pay benefits accurately and timely II-C Ensure the effectiveness, efficiency, and security of operation	Workstation licenses for Windows and Microsoft Office	Enterprise Software Licensing for Windows and Microsoft Office		100% implementation	
2005	I-A Pay benefits accurately and timely II-C Ensure the effectiveness, efficiency, and security of operation	89 MIPS mainframe, 72MB VTS, IBM 3745 FEP	Additional mainframe support to support conversion from IDMS databases to relational databases		100% implementation	
2005	I-A Pay benefits accurately and timely II-C Ensure the effectiveness, efficiency, and security of operation	Firewall and antivirus	Additional information security tools and software		100% implementation	
2005	I-A Pay benefits accurately and timely II-C Ensure the effectiveness, efficiency, and security of operation	Current contingency plans for all major applications/general support systems.	Risk Management/Contingency Plan reviews and updates		Reviews completed on 100% of systems implemented	

Table 1						
Fiscal Year	Strategic Goal(s) Supported	Existing Baseline	Planned Performance Improvement Goal	Actual Performance Improvement Results	Planned Performance Metric	Actual Performance Metric Results
2005	I-A Pay benefits accurately and timely II-C Ensure the effectiveness, efficiency, and security of operation	Security Awareness (level 1)	Security Training		Training program in place Training completed for employees per schedule	
2006	I-A Pay benefits accurately and timely II-C Ensure the effectiveness, efficiency, and security of operation	1.5 TB for the mainframe and 1.5 TB for Open Systems	Increase Enterprise storage capacity		100% implementation	
2006	I-A Pay benefits accurately and timely II-C Ensure the effectiveness, efficiency, and security of operation	Firewall and antivirus	Enterprise Security Management System (ESMS)		100% implementation	
2006	I-A Pay benefits accurately and timely II-C Ensure the effectiveness, efficiency, and security of operation	Current contingency plans for all major applications/ general support systems	Risk Management/ Contingency Plan reviews and updates		Reviews completed on 100% of systems implemented	
2006	I-A Pay benefits accurately and timely II-C Ensure the effectiveness, efficiency, and security of operation	Security Awareness (level 1)	Security Training		Training program updated Training completed for employees per schedule	
2007	I-A Pay benefits accurately and timely II-C Ensure the effectiveness, efficiency, and security of operation	Firewall and antivirus	Information Security Forensic collection and analysis tools and Third-Party penetration testing		100% implementation	
2007	I-A Pay benefits accurately and timely II-C Ensure the effectiveness, efficiency, and security of operation	Security Awareness (level 1)	Security Training		Training program updated Training completed for employees per schedule	
2007	I-A Pay benefits accurately and timely II-C Ensure the effectiveness, efficiency, and security of operation	Current contingency plans for all major applications/ general support systems	Risk Management/ Contingency Plan reviews and updates		Reviews completed on 100% of systems implemented	

All new IT investments that are development, modernization, or enhancement (DME) for 2005 and beyond must use Table 2 and are required to use the FEA Performance Reference Model. The PRM Version 1.0, available at www.feapmo.gov, includes detailed guidance about how to incorporate PRM Indicators into the performance goals and measures table below. Please use the Table 2 and the PRM to identify the performance information that pertains to the major IT Investment. Ensure there is a complete tie-in to the strategic goals and objectives described in section I.B.1.

The PRM has not been released as of the date this Exhibit 300 was completed.. The FEAPMO website state that *The Performance Reference Model (PRM) is scheduled to be released later this year.*

Once the PRM has been released, we will use it to identify the performance information pertaining to this initiative.

Table 2						
Fiscal Year	Measurement Area	Measurement Category	Measurement Indicator	Baseline	Planned Improvements to the Baseline	Actual Results
2005						
2005						
2006						
2006						

I.D. Project Management (Investment Management) [All Assets]

The OMB Circular A-11, Part 7, Capital Programming Guide, and the OPM Project Management Guidance "Interpretive Guidance for Project Manager Positions, discuss project management structures, responsibilities, and qualifications that contribute to successful achievement of cost, schedule, and performance goals.

I.D. 1. Is there a project (investment) manager assigned to the investment? Yes No

If so, what is his/her name? Sam D’Agostino and Claudia Jackson

I.D.1(A) Identify the members, roles, qualifications, ad contact information of the in-house and contract project (investment) managers for this project (investment).

Name: Samuel D’Agostino **Role:** IT Project Manager
Title: Chief of Infrastructure Services

Contact Info

U.S. Railroad Retirement Board
 844 N Rush Street 3rd Floor
 Chicago, IL 60611
 (312) 751- 4720

Qualifications:

Over 19 years management and supervisory experience in Methods and procedures, user computer services, and infrastructure services.

Managed or supervised the following projects:

- Y2K Server Compliance upgrades
- Frame Relay project
- Implementation of a standard email system
- Implementation of Enterprise Anti-Virus protection for the agency
- Implementation of the Virtual Private Network
- Replacement of work stations and servers
- The upgrade of the Wide Area Network
- The procurement and installation of a new IBM Enterprise Storage Server

Name: Claudia Jackson **Role:** IT Project Manager

Title: Chief Security Officer

Contact Info

U.S. Railroad Retirement Board
844 N Rush Street 3rd Floor
Chicago, IL 60611
(312) 751- 4720

Qualifications:

Chief Security Officer

25+ years of experience in Information Systems development and project management

I.D.2. Is there a contracting officer assigned to the project (investment)?

Yes No

If so, what is his/her name?

Henry Valiulis
Director of Administration

I.D.3 . Is there an Integrated Project Team?

Yes No

I.D.3(A) If so, list the skill set represented.

Project Manager

- Technical manager

Supervisor of Systems and Network Support

Supervisor of Computer Operations

Business Team

- Supervisory Analyst

- Business Analyst

Technical Team

- IT Specialist

- Senior Systems Engineers

- System Engineers

- Network Engineers

- Supervisory Database Administrators

- Database Administrators

- Senior Data Communication Engineer

- Data Communication Engineer

- Lead Operators

- Computer Assistants

- Chief Security Officer

- IT Security Analyst

Advisors

- Contracting Officer

- Contracting Specialist

- Architecture Contact

I.D.4. Is there a sponsor/owner for this investment?

Yes No

I.D.4(A) If so, identify the sponsor/process owner by name and title and provide contact information.

Kenneth J. Zoll

Chief Information Officer
U.S. Railroad Retirement Board
844 N Rush Street
3rd Floor
Chicago, IL 60611
312 751-7191
Ken.Zoll@rrb.gov

I.E. Alternatives Analysis [All Assets]

In order to successfully address this area of the business case, you must include three viable alternatives that were compared consistently, identify the alternative chosen, and provide benefits and reasons for your choice. Agency must identify all viable alternatives and then select and report details on the top three viable alternatives. Use OMB Circular A-94 for all investments and the Clinger Cohen Act for IT investments for the criteria to be used for Benefit/Cost Analysis. Agency must include the minimum criteria to be applied in considering whether to undertake a particular investment, including criteria related to the quantitatively expressed projected net, risk-adjusted return on investment, and specific quantitative and qualitative criteria for comparing and prioritizing alternative investments. For IT investments, agencies should use the Federal Enterprise Architecture (FEA) to identify potential alternatives for partnering or joint solutions that may be used to close the identified performance gap.

I.E.1 Describe the alternative solutions you considered for accomplishing the agency strategic goals or for closing the performance gap that this investment was expected to address. Describe the results of the feasibility/performance/benefits analysis. Provide comparisons of the returns (financial and other) for each alternative.

The RRB considered three approaches as we evaluated the infrastructure needs within our organization. Our overall goal was to ensure that we have sufficient information technology resources to meet our strategic goals, which include providing excellent customer service while serving as responsible stewards of our agency's resources. Specifically, this project supports the upgrade and/or replacement of the principal components in the RRB's mainframe computer architecture, located in the RRB's national computer center. These components include mainframe computer hardware, data storage management, and mainframe software acquisitions and upgrades.

This initiative will also replace individual workstation licenses with enterprise-wide licensing software, And will introduce new software products to improve reliability and enhance workstation performance.

An integral part of our target architecture is the assurance of the privacy, protection and integrity of the safeguards employed to protect security access to the RRB infrastructure. This initiative includes the necessary funds to address several areas of need identified in the agency's annual Federal Information Security Management Act (FISMA) reviews.

The following criteria was used to evaluate each of the proposed solutions.

The solutions should:

- Improve reliability.
- Enhance performance.
- Replace aging and non-supported equipment.
- Allow us to meet needed capacity requirements.
- Position us to more easily adapt to future changes in infrastructure needs.
- Provide the capabilities needed to support the agency's target technical strategy, principles and guidelines.
- Enhance security, confidentiality and privacy principles to meet federal requirement and security architecture principles and guidelines.

Alternative 1: Maintain current environment. This option includes replacing hardware and software reactively. Specifically, components are replaced when there is a system breakdown, to meet a vendor imposed deadline of obsolescence or when changes are driven by a legislative mandated need.

Alternative 2: Convert to a LAN based platform

Although this solution adheres to the stated requirements of reliability, support, extensibility and architecture, it is not a viable option. Our current IDMS database is exclusive to the mainframe environment, and must be converted to a database supported on the chosen LAN platform prior to switching platforms. Therefore, detailed analysis to determine whether the LAN platform would meet our baseline criteria of efficiency, security and processing capabilities were not performed.

Alternative 3: Infrastructure Modernization Initiative

This solution supports the Enterprise Architecture strategy, provides for interoperability, reliability, expansibility and efficiency. It provides the needed foundational requirements that will allow the agency to reach our target technical, business, security, data, and security architecture. It incorporates security and privacy management as foundational controls within the framework of the infrastructure.

This alternative provides agency-wide support at the desktop, systems and network levels. It will support a variety of improvements to the agency's infrastructure that are required to support the enterprise architecture strategic initiatives.

This initiative will allow the RRB to establish our future platform, allowing us to either prepare legacy systems for retirement or re-engineering. If funding is provided for this initiative, the following improvements will be undertaken:

In fiscal year 2005, the RRB will increase the mainframe size to support systems development conversion efforts from IDMS legacy databases to DB2.

In order to enhance the processing power of the new mainframe we will add 144MB of cache memory to the Virtual Tape System at a cost of \$75,000 in fiscal year 2005.

A key element of our target architecture is ensuring infrastructure reliability. The current front-end processor that supports connections to the Social Security Administration, AT&T-IVR, Treasury, an SNA gateway server, and the AT&T Global Network was installed in 1993. This unit would be replaced with a new switching device to take advantage of advances in telecommunications capabilities. In fiscal year 2005.

Additional mainframe support will be needed in fiscal year 2006 for the database migration. This support should be obtained at the end of the last quarter of fiscal year 2005 so that it will be in place for fiscal year 2006.

In fiscal year 2006 the RRB will need to increase the storage capacity on the Enterprise Storage System with an additional 3 TB of storage when the database migration effort will begin.

Enterprise licensing of the RRB's key personal computer software is another key element of our target architecture. The proliferation of various versions of personal computer operating systems (Windows 95 through XP) as well as versions of office suite product makes it difficult for the RRB to realize the potential cost-savings achieved from enterprise licensing. Enterprise licensing would enable RRB to better leverage its IT resources by obtaining additional discounts. Other potential benefits include a more efficient deployment of software and other applications to bureaus and field offices, better management and deployment of network resources, and better management of the content that is sent over the network

Information security is an integral component of infrastructure reliability. In fiscal year 2005, we plan to add:

- Secure email capabilities with outside entities,
- Secure two-factor logon for specifically required business processes for remote users,
- Enhanced content filtering software,
- Incident response tools, and
- PDA wireless security.

This initiative includes the development of an Enterprise Security Management System (ESMS) in FY06 to provide all of the Information Technology Security Controls for the RRB. ESMS is a family of IT security technical controls to assist in

maintaining the confidentiality, integrity and availability of all data on the RRB enterprise network, including the hardware/software components for an Intrusion Detection and Prevention System.

In fiscal year 2007 at we plan to add

- Forensic collection and analysis tools, and
- Third-party penetration testing.

We would update risk management and contingency plans to provide for secure online interactive information exchange, provide formally documented comprehensive security plans, and updated recovery and contingency plans.

Focused security training will be provided to personnel with roles and responsibilities for IT systems and continuing education for technicians whose responsibilities directly support security.

This initiative adheres to all the stated requirements of reliability, support, extensibility, architecture and security. It is critical and a mandatory prerequisite to reaching the agency’s modernization, data and e-government target architecture strategies.

I.E.1(A) Discuss the market research that was conducted to identify innovative solutions for this investment (e.g., used an RFI to obtain four different solutions to evaluate, held open meetings with contractors to discuss investment scope, etc.). Also describe what data was used to make estimates such as, past or current contract prices for similar work, contractor provided estimates from RFIs or meetings, general market publications, etc.

Alternative	Description
Alternative 1	Performed Platform Architecture, identified current state and future state of our infrastructure. Performed the Gap Analysis phase of our platform, network, business, data, distributed operation and e-government Enterprise Architecture and derived a strategy that once adopted would transition the RRB to our target platform architecture. Studied specific requirements of the Enterprise Architecture Strategic Initiatives. Researched current and projected future market trends. Attended Infrastructure and Security conferences and information sessions. Studied trade journals.
Alternative 2	Performed Platform Architecture, identified current state and future state of our infrastructure. Performed Gap Analysis phase of our platform, network, business, data, distributed operation and e-government Enterprise Architecture and derived a strategy that once adopted would transition the RRB to our target platform architecture. Studied specific requirements of the Enterprise Architecture Strategic Initiatives. Researched current and projected future market trends. Attended Infrastructure and Security conferences and information sessions. Studied trade journals. Researched feasibility of transitioning platforms. Researched platform requirements of current vendor’s database products, and database capabilities of various vendor’s platform.
Alternative 3	Performed Platform Architecture, identified current state and future state of our infrastructure. Performed Gap Analysis phase of our platform, network, business, data, distributed operation and e-government Enterprise Architecture and derived a strategy that once adopted would transition the RRB to our target platform architecture. Studied specific requirements of the Enterprise Architecture Strategic Initiatives. Researched current and projected future market trends. Attended Infrastructure and Security conferences and information sessions. Studied trade journals.

I.E.2. Summarize the results of your life-cycle cost analysis performed for each investment and the underlying assumptions.

This life-cycle cost analysis covers a compact life cycle of three years. The three year analysis covers FY 2005 through FY 2007. OMB Circular A-94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs was used. Accordingly, costs provided are present value dollars. Consequently, the comparison of alternatives based on same year dollars, avoiding inconsistencies created by inflation or deflation of the dollars. This is done by discounting future year dollars by a discount factor, which is released by OMB. The discount rates released in Appendix C of the A-94 circular, revised January 2003 were used.

The first alternative, “Maintain Present Environment,” will result in an increased risk of system failure and outages. In the current environment the RRB is reactive rather than proactive, and lacks funding to plan for and achieve a more efficient, effective environment.

Total cost of ownership would continue to increase since the cost of older hardware and software is generally higher than emerging technologies while yielding less capacity. This alternative would significantly hinder our compliance with the Clinger-Cohen Act, and would delay our progress in developing e-government options in accordance with the President’s Management Agenda.

Further, the current environment limits our ability to reach our target architecture and enhance interoperability of our systems. It actually increases the time and cost associated with developing e-government initiatives. The security of our environment may be compromised without sufficient upgrades in security tools, training, and the addition of intrusion detection technology. An additional risk that must be considered is that the RRB would continue its near total dependency on a database technology that limits interoperability, has a shrinking user base, and can only be maintained by a handful of employees who are on the verge of retirement.

The second alternative, “Convert to a LAN Based Platform,” is simply not a viable option. Our current hierarchical database cannot be moved to a LAN platform. The risks associated with concurrently converting databases and modifying the majority of our applications, while simultaneously retooling and retraining all system support and operations personnel, are unacceptable.

Cost Elements	Alternative 1	Alternative 2	Alternative 3
Planning & System Development	\$0.0	\$1.5	\$0.0
System Implementation and Acquisition	\$0.0	\$3.7	\$3.7
Operation and Maintenance	\$0.54	\$0.5	\$0.0
Total	\$0.54	\$5.7	\$3.7

Note: Costs are shown in millions.

I.E.3. Which alternative was chosen and why?

The third alternative, the “Infrastructure Modernization Initiative,” was chosen because it will improve reliability, enhance performance, replace aging and non-supported equipment, and improve our capacity requirements. The agency will also more easily adapt to future changes in infrastructure needs. This initiative will allow the RRB to establish our future target architecture platform, allowing us to either prepare legacy systems for retirement or re-engineering. This approach incorporates all the requirements needed to support the agency’s Enterprise Architecture Strategic Plan. It provides the foundation to all future efforts toward our target technical, business, data, and security architecture. Finally, this alternative provides for interoperability, reliability, expansibility and efficiency. It incorporates security and privacy management within the framework of the infrastructure.

I.E.3(A) Are there any quantitative benefits that will be achieved through this investment (e.g., systems savings, cost avoidance, stakeholder benefits, etc)? Define the Return on Investment (ROI).

- The adoption of this initiative will allow us to improve reliability, enhance performance, replace aging and non-supported equipment.
- It will allow us to meet needed capacity requirements as well as position us to more easily adapt to future changes in infrastructure needs.
- This initiative is consistent with the agency’s Enterprise Architecture and is a foundational prerequisite to successfully reaching our future architecture and supporting the agency’s strategic goals.
- It will improve performance, better accommodating the changing business needs.
- Supports information systems interoperability.
- Capital expenditures will be leveraged in network design to ensure future reduction in integration complexity.
- Authentication, security and privacy issues will be fully addressed.
- Potential for reduced cost due to reduced reliance on a single vendors proprietary products.

Present Value by Year and Payback Period Calculations:

YEAR =	FY05	FY06	FY07	Total Life-Cycle
Savings/ Cost Avoidances	\$1.57	\$1.87	\$2.17	\$5.61
Investment Cost (Risk- Adjusted)	\$1.40	\$1.50	\$0.76	\$3.70
Net Present Value (NPV)	\$0.17	\$0.37	\$1.41	\$1.95
Return on Investment (ROI) (for lifecycle not by year)				\$1.89
Payback Period				3 years

Note: Costs are shown in millions.

I.E.4. What is the date of your cost benefit analysis?

September 2003

I. F. Risk Inventory and Assessment (All Assets)

In order to successfully address this issue on the business case and capital asset plan, you must have performed a risk assessment at the initial concept, included mandatory risk elements defined below and demonstrate active management of the risk throughout the life-cycle of the investment.

For all investments, both IT and non-IT, you must discuss each of the following risks and present your plans to eliminate, mitigate, or manage risk, with milestones and completion dates. If there is no risk to the investment achieving its goals from a risk category, indicate so. If there are other risks identified, include them. Risk assessments should include risk information from all stakeholders and should be performed at the initial concept stage and then monitored and controlled throughout the life-cycle of the investment. Risk assessments for all investments must include: 1) schedule; 2) initial costs; 3) life-cycle costs; 4) technical obsolescence; 5) feasibility; 6) reliability of systems; 7) dependencies and interoperability between this investment and others; 8) surety (asset protection) considerations; 9) risk of creating a monopoly for future procurements; 10) capability of agency to manage the investment; and 11) overall risk of investment failure.

In addition, for IT investments, risk must be discussed in the following categories 12) organizational and change management; 13) business; 14) data/info; 15) technology; 16) strategic; 17) security; 18) privacy; and 19) project resources. For security risks, identify under the Description column the level of risk as high, medium, or basic. What aspect of security determines the level of risk, i.e., the need for confidentiality of information, availability of information or the system, reliability of the information or system? Under the Current Status column, list the milestones remaining to mitigate the risk.

Date Identified	Area of Risk	Description	Probability of Occurrence	Strategy for Mitigation	Current Status
August 2003	Schedule	Ability to obtain required funding and resources will affect schedule	High	-Endorsement by Executive Committee - Prepare and tightly manage to schedule	In process FY 05 budget documents being prepared
August 2003	Initial costs	Accuracy of initial costs	Low	-Thorough analysis of cost estimates -Coordination with procurement. -Use of industry benchmarks	Study of cost and resource requirements completed, reviewed and approved
August 2003	Life-cycle costs	Funding is on a yearly basis. May not receive sufficient funds to complete	Medium	-Work with agency executives and OMB to maintain project funding levels -Carefully scope project -Closely monitor project and budget	Ongoing. Project management and oversight in place
August 2003	Technical obsolescence	Ensure currency of technology solution	Low	-Maintain and update the RRB Enterprise Architecture	Ongoing, RRB EA and Capital Plan approved and processes in place
August 2003	Feasibility	Make certain of feasibility from technical and management perspective	Low	-Conduct industry baseline studies -Maintain a robust CPIC process and updated EA	Ongoing, CPIC and EA in place and operational Studies will be made as needed
August 2003	Reliability of systems	Failure and system interruption is unacceptable for the processes supported	Medium	-Provide adequate system recovery, backup and alternate processing capability	Ongoing, Processes in place, Review of adequacy on annual basis
August 2003	Dependencies and interoperability between this investment and others	Maintain interoperability of investments and systems	Low	-Maintain a robust CPIC process and updated EA	Ongoing, RRB EA and Capital Plan approved and processes in place
August 2003	Surety (asset protection) considerations	RRB systems may be compromised	Low	-Evaluate and adopt security controls in plans	Planned, This will be part of the project planning and development phases
August 2003	Risk of creating a monopoly for future procurements	Risk if more than slight modification of COTS	Low	-Use of open architecture components - Work within the agency and government community	Ongoing, Enterprise Architecture in use. Active participation with agencies

Date Identified	Area of Risk	Description	Probability of Occurrence	Strategy for Mitigation	Current Status
August 2003	Capability of agency to manage the investment	Commitment from Executive Committee required to effectively manage the investment	Low	-Actively engaged executive steering committee that will act as a governing body -Viable capital planning process is also being used	Ongoing, Executive Committee meets every week Senior agency staff will be actively involved with the RRB Modernization
August 2003	Overall risk of investment failure	Must continually manage from an Enterprise Architecture perspective	Low	-Maintain Executive Committee involvement -Obtain and maintain stakeholder and customer buy-in	Ongoing, Executive Committee meets every week, Senior agency staff will be actively involved with the RRB Modernization
August 2003	Organizational and change management	Changes in mission and organization can threaten investment	Low	-Maintain Executive Committee involvement	Ongoing, Executive Committee meets every week, Senior agency staff will be actively involved with the RRB Modernization
August 2003	Business	Ability to identify and streamline business processes	Medium	-Established, approved and vetted concepts that drive the BPR and requirements gathering activities	Planned, This activity will primarily occur during the applications redesign phases
August 2003	Data/info	Must have agreement on content and structure of the data	Medium	-Utilize RRB Enterprise Architecture with active program participation	Ongoing, Communications/outreach in process, Enterprise Architecture in use
August 2003	Technology	Technology must be kept current and meet the requirements of agency	Low	-Utilize RRB Enterprise Architecture with active program participation	Ongoing, Communications/outreach in process, Enterprise Architecture in use
August 2003	Strategic	Timing of implementation of capabilities could affect ability to maintain momentum and support	Low	-A staged implementation of the modules will be completed at the earliest possible date -Use of flexible development to facilitate minimum impact due to changes based on delays external to the scope of control	Ongoing, Project planned from EA perspective, CPIC control process will ensure proper execution of project phases

Date Identified	Area of Risk	Description	Probability of Occurrence	Strategy for Mitigation	Current Status
August 2003	Security	Dependent upon well defined system level security requirements and security specifications	Low	-System security plan completed, updated and utilized that links to site security plan	Ongoing, Site Security plan completed, Initial security plans scheduled
August 2003	Privacy	Privacy aspects of claimants must be assured	Low	-Employ up-to-date techniques for protection of sensitive information and protect against disclosure	Scheduled, This will be part of the overall project planning
August 2003	Project resources	Project success requires individuals with the right skill mix and involvement of all affected organizations	Medium	-Maintain Executive Committee involvement	Ongoing, Executive Committee meets every week, Senior agency staff will be actively involved with the RRB Modernization

I. F. 1. What is the date of your risk management plan?

Expect to complete plan by August 2004

I.G. Acquisition Strategy

In order to adequately address this area of the business case and capital asset plan you must employ a strong acquisition strategy that mitigates risk to the Federal government, accommodate Section 508 as needed, and use performance based contracts and (SOWs). If you are not using performance based fixed price contracts, your acquisition strategy should clearly define the risks that prompted the use of other than performance based contracts and SOWS. Finally, your implementation of the Acquisition Strategy must be clearly defined.

I.G.1. Will you use a single contract or several contracts to accomplish this investment?

Multiple

I.G.1(A) What is the type of contract/task order if a single contract is used?

Not applicable, based on previous answer.

I.G.1(B) If multiple contract/task orders will be used, discuss the type, how they relate to each other to reach the investment outcomes, and how much each contributes to the achievement of the investment cost, schedule and performance goals. Also discuss the contract/task order solicitation or contract provisions that allow the contractor to provide innovative and transformational solutions.

An acquisition strategy has been designed to manage the procurement risk associated with developing and implementing the Infrastructure Modernization Initiative/RRB Modernization Blueprint Initiative/Metadata Repository Initiative/E-Government Service Delivery Initiative. This strategy is based upon the following criteria:

- Use existing, in-place contracts when appropriate
- Pay the lowest price for products/services commensurate with quality, service, delivery, and reliability.
- Closely manage solicitations and the resulting contracts.
- Use outside sources and partnerships, when possible to achieve our mission.

The RRB will leverage existing contracts to the extent feasible in an effort to limit the amount of time and effort required for establishing contractual vehicles. This includes the use of existing RRB contracts with Information Technology products and/or services companies (Sentinel, IBM, AT&T, and Sprint).

I.G.2. For other than firm-fixed price, performance-based contracts, define the risk not sufficiently mitigated in the risk mitigation plan, for that contract/task order, that requires the Government to assume the risk of contract achievement of cost, schedule and performance goals. Explain the amount of risk the government will assume.

Acquisition is done by competitive sourcing using GSA schedule buys, GWACS or firm fixed price. When the aforementioned instruments are not used, the government risk will be limited to that incurred by the use of Time and Material Task orders under Agreements or IDIQ Contracts with defined deliverables based on mutually agreed to scopes of work. The Task orders will be issued with price ceiling based on evaluated contractor proposals with labor categories, estimated hours, and the established price rates. These measures minimize risk to the government.

I.G.3. Will you use financial incentives to motivate contractor performance (e.g. incentive fee, award fee)?

Typically incentive contracts are not employed. Negotiated firm fixed price contracts and competitive procurements from schedules and multi-agency contracts are used.

I.G.4. Discuss the competition process used for each contract/task order, including the use of RFP's, schedules or other multiple agency contracts, etc?

Acquisition is done by competitive sourcing using GSA schedule buys, GWAC awards or firm fixed price contracts or agreements. The RRB would use GWAC contract competitive procedures, FAR part 8.404 GSA contract comparison procedures or the FAR part 15 Competitive proposal procedure as appropriate.

I.G.5. Will you use commercially available or COTS products for this investment?

Yes, COTS and commercially available hardware and software will be used.

I.G.5 (A) To what extent will these items be modified to meet the unique requirements of this investment?

The RRB does not generally procure COTS hardware or software packages, which must be modified to meet Government requirements. Only configuration of the COTS hardware or software is performed to optimize the performance in the RRB environment.

I.G.5 (B) What prevented the use of COTS without modification?

RRB Procurement policy is that COTS are not modified.

I.G.6. What is the date of your acquisition plan?

Initial acquisition planning has begun. We will solidify the acquisition plan once the budget is approved.

I.G.7. How will you ensure Section 508 compliance?

The solicitation specifies the 508 certificates that the vendor must meet. Vendors provide the required certification for any hardware, software or programming requested as part of the procurement proposal. This RRB Information Technology staff under the leadership of the designated RRB COTR verifies the compliance with the section 508 compliance through the testing and acceptance process established in the RRB.

I.G.8. Acquisition Costs:

I.G.8(A) For budget year, what percentage of the total investment is for hardware acquisition?

46%

I.G.8(B) For budget year, what percentage of the total investment is for software acquisition?

20%

I.G.8(C) For budget year, what percentage of the total investment is for services acquisition?

34%

I.H. Project (Investment) and Funding Plan

In order to successfully address this section of the business case, you must demonstrate use of an Earned Value Management System (EVMS) that meets ANSIIEIA Standard 748, for both government and contractor costs, for those parts of the total investment that require development efforts (e.g., prototypes and testing in the planning phase and development efforts in the acquisition phase) and show how close the investment is to meeting the approved cost, schedule and performance goals. Information on EVMS is available at <http://www.acq.osd.mil/pm>. For those investments in the operations/steady state phase, you must perform an operational analysis as defined in the Capital Programming Guide to demonstrate how close the investment is to achieving the expected cost, schedule and performance goals for this phase. Program status information in this section must include both the contractor's part of the investments overall costs and milestone requirements as well as the government's costs and milestone requirements to successfully complete the investment phase, segment or module being reported.

I.H.1. Description of performance-based management system (PBMS)

Explain the methodology used by the agency to analyze and use the earned value performance data to manage performance. Describe the process you will use or used to verify that the contractor's project management system follows the ANSIIEIA Standard 748-A. If the investment is operational (steady state), define the operational analysis system that will be used. If this is a mixed life-cycle investment with both operational and development/modernization/enhancement (DME) system improvement aspects, EVMS must be used on the system improvement aspects of the investment and operational analysis on the operations aspects. Using information consistent with the work breakdown structure (WBS), provide the information requested in all parts of this section.

The RRB has initiated steps to require an earned value analysis as a crucial element for project management. We have incorporated it as a requirement within our Capital Planning and Investment Control process. MS Project will be used to track and manage actual cost, schedule and performance against the OMB-approved baseline.

I.H.2. Original baseline (OMB-approved at investment outset)

What are the cost and schedule goals for this phase or segment/module of the investment (e.g., what are the major investment milestones or events; when will each occur; and what is the estimated cost to accomplish each one)? Also identify the funding agency for each milestone or event if this is a multi-agency investment. For operational or steady state projects, complete one line on the chart for each year of this phase. If the project is mixed life-cycle there will be two parts to the chart; one for the O&M portion and one for the developmental portion using EVMS. If this is a multi-agency investment or one of the President's E-Gov initiatives, use the detailed investment plan with milestones on the critical path, to identify agency funding for each module or milestone. (This baseline must be included in all subsequent reports, even when there are OMB-approved baseline changes shown in I.H.3).

Cost and Schedule Goals: Original Baseline for a Phase/Segment/Module of Project (Investment)					
Description of Milestone	Schedule			Planned Cost	Funding Agency
	Start Date	End Date	Duration (in days)		
1. Mainframe Enhancements	10-1-04	2-28-05	100	\$255,000	RRB
2. Additional Mainframe Support	9-1-05	9-30-06	271	\$600,000	RRB
3. Enterprise Software Licensing	10-1-04	2-28-05	100	\$225,000	RRB

4. Information Security Additions	10-1-04	2-28-05	100	\$250,000	RRB
5. Risk Management/Contingency Plan reviews and updates	10-1-04	9-30-05	251	\$50,000	RRB
6. Security Training	3-1-05	9-30-05	151	\$65,000	RRB
7. Increase Storage Capacity and	10-1-05	2-28-06	100	\$425,000	RRB
8. Increased Mainframe Software Maintenance	10-1-05	9-30-06	250	\$120,000	RRB
9. Enterprise Software Licensing	10-1-05	2-28-06	100	\$225,000	RRB
10. Enterprise Security Management System	10-1-05	9-30-06	250	\$682,000	RRB
11. Risk Management/Contingency Plan reviews and updates	10-1-05	9-30-06	250	\$55,000	RRB
12. Security Training	10-1-05	9-30-06	250	\$70,000	RRB
13. Increased Mainframe Software Maintenance	10-1-06	2-28-07	101	\$120,000	RRB
14. Enterprise Software Licensing	10-1-06	2-28-07	101	\$225,000	RRB
15. Security Forensic Collection and Analysis Tools and Third-Party Penetration Testing	10-1-06	2-28-07	101	\$190,000	RRB
16. Risk Management/Contingency Plan reviews and updates	10-1-06	9-30-07	250	\$150,000	RRB
17. Security Training	10-1-06	9-30-07	250	\$75,000	RRB
Completion date: 9-30-07				Total cost estimate at completion: \$3,782,000	

I.H.3. Proposed baseline/current baseline (applicable only if OMB-approved the changes)

Identify in this section a proposed change to the original or current baseline or an OMB-approved baseline change. What are the new cost and schedule goals for the phase or segment/module (e.g., what are the major investment milestones or events; when will each occur; and what is the estimated cost to accomplish each one)? Also identify the funding agency for each milestone or event if this is a multi-agency investment. If this is a new investment in the FY 2005 budget year, this section will be blank for your initial submission.

Not applicable to RRB at this time.

Cost and Schedule Goals:					
Proposed or Current (OMB-Approved) Description of Milestone	Baseline for a Phase/Segment/Module of Project (Investment)			Planned Cost	Funding Agency
	Start Date	End Date	Duration (in days)		
1.					
2.					
3.					
Completion date:				Total cost estimate at completion:	

I.H.4 Actual performance and variance from OMB-approved baseline (original or current)

I.H.4(A) This section is always filled in to reflect current status of the investment. It compares the OMB approved baseline and actual results for this phase, segment, or module of the investment. Show for each major investment milestones or events you planned (scheduled) to accomplish and the cost and what work was actually done and the cost. If the project is in the operational or steady state phase complete one line on the chart for each year. For these projects complete paragraphs C, D, F and G as appropriate. If this is a new investment in the FY 2005 budget year, this will be blank for your initial submission. OMB may ask for latest information during the budget review process.

Not applicable to RRB at this time.

Comparison of OMB-Approved Baseline and Actual Outcome for Phase/Segment/Module of a Project (Investment)									
Description of Milestone	OMB-Approved Baseline					Actual Outcome			
	Schedule			Planned Cost	Funding Agency	Schedule		Percent Complete	Actual Cost
	Start Date	End Date	Duration (in days)			Start Date	End Date		
1.									
2.									
3.									
Completion date: OMB-approved baseline:						Estimated completion date:			
Total cost: OMB-approved baseline:						Estimate at completion:			

I.H.4(B) Provide the following investment summary information from your EVMS data (as of date):

I.H.4(B.1) Show the budgeted (planned) cost of work scheduled (BCWS): \$

I.H.4(B.2) Show budgeted (planned) cost of work actually performed (BCWP): \$

I.H.4(B.3) Show the actual cost of work performed (ACWP): \$

I.H.4(B.4) Provide a performance curve graph plotting BCWS, BCWP and ACWP on a monthly basis from inception of this phase or segment/module through the latest report. In addition, plot the ACWP curve to the estimated cost at completion (EAC) value, and provide the following EVMS variance analysis.

Project (Investment) Summary (Cumulative)	Value
Cost Variance = (BCWP-ACWP) =	
Cost Variance % = (CV/BCWP) x 100%	
Cost Performance Index (CPI) = (BCWP/ACWP)	
Schedule Variance = (BCWP-BCWS) =	
Schedule Variance % = (SV/BCWS) x 100%	
Schedule Performance Index (SPI) = (BCWP/BCWS)	
Two independent Estimates at Completion (EAC) = ACWPCum + (Performance Factor (PF) X (BAC minus BCWPCum)), where PF 1 = 1/CPI, and PF2 = 1/(CPI X SPI). =	
Variance at Completion (VAC) = (BAC minus EAC) for both EACs above =	
Variance at Completion % = (VAC/BAC) x 100% for both EACs above =	
Estimated Cost to Complete (ETC)=	
Expected Completion Date =	

Definitions for Earned Value Management System:

- ACWP - Actual Cost of Work Performed - What you paid.
- BAC - Budget At Completion - The baseline (planned) budget for the investment.
- BCWP - Budgeted Cost for Work Performed - The earned value.
- BOWS - Budgeted Cost for Work Scheduled - The planned costs.
- CPI - Cost Performance Index - The ratio of the budgeted to actual cost of work performed.
- CV - Cost Variance - The difference between planned and actual cost of work performed.
- EAC - Estimate At Completion - The latest estimated cost at completion.
- ETC - Estimate to Completion - Funds needed to complete the investment.
- PF - Performance Factor - The cost to earn a dollar of value, or ACWPI/BCWP, or 1/CPI.
- SPI - Schedule Performance Index - The percent of the investment that has been completed.
- SV - Schedule Variance - The variance between the actual and planned schedules.
- VAC - Variance at Completion - The variance between the baseline and actual budget at completion.

I.H.4(C) If cost and/or schedule variance are a negative 10 percent or more at the time of this report or EAC is projected to be 10 percent or more, explain the reason(s) for the variance(s).

I.H.4(D) Provide performance variance. Explain based on work accomplished to date, whether or not you still expect to achieve your performance goals. If not, explain the reasons for the variance. For steady state projects, in addition to a discussion on whether or not the system is meeting the program objectives, discuss whether the needs of the owners and users are still being met.

I.H.4(E) For investments using EVMS, discuss the contractor, government, and at least the two EAC index formulas in I.H.4.B, current estimates at completion. Explain the differences and the IPT's selected EAC for budgeting purposes. This paragraph is not applicable to operations/steady state investments.

I.H.4(F) Discuss the corrective actions that will be taken to correct the variances, the risk associated with the actions, and how close the planned actions will bring the investment to the original baseline. Define proposed baseline changes, if necessary.

I.H.4(G) If the investment cost, schedule or performance variances are 10% or greater, has the Agency Head concurred in the need to continue the program at the new baseline?

Yes _____ No _____

Exhibit 300: Part II: Additional Business Case Criteria for Information Technology

II. A. Enterprise Architecture

In order to successfully address this area of the business case and capital asset plan you must ensure that the investment is included in the agency's EA and CPIC process, and is mapped to and supports the Federal Enterprise Architecture. You must also ensure that the business case demonstrates the relationship between the investment and the business, data, application, and technology layers of the EA.

II.A.1. Business

II.A.1(A) Is this investment identified in your agency's enterprise architecture? If not, why?

Yes, the RRB's Enterprise Architecture Strategic Plan proposed several initiatives, including this one, to assist in achieving its Target Architecture. The RRB's Target Architecture is an information environment that ultimately can support 1) the interoperability of all electronic operations, 2) effective internal and external communications, and 3) an adaptive and flexible infrastructure that is proactive in addressing business needs and challenges, all with appropriate levels of security. Through a gap analysis, structural initiatives to address technology deficiencies in RRB's existing information technology environment and functional initiatives to address deficiencies of current business processes were identified. To successfully close the identified gaps, this investment is an essential foundation with which the RRB will build upon to achieve its Target Architecture.

II.A.1(A1) Will this investment be consistent with your agency's "to be" modernization blueprint?

Yes, the purpose of the this investment is to develop and implement an evolutionary, high-performance secure, information technology platform that is aligned with our architecture, facilitates our program and business goals and enables platform integration and interoperability.

II.A.1(B) Was this investment approved through the EA Review committee at your agency?

Yes, the RRB Modernization Blueprint is one of several initiatives identified in the agency's Enterprise Architecture Strategic Plan approved by our Architecture Review Board.

II.A.1(C) What are the major process simplification/reengineering/design projects that are required as part of this IT investment?

The re-engineering of system configurations is required to take advantage of improvements in the performance and costs of computer technologies.

II.A.1(D) What are the major organization restructuring, training, and change management projects that are required?

Due to the size and scope of this investment, significant security changes and change management for the infrastructure acquisitions and enhancements will be required. We will be utilizing MS Projects 2002 to track tasks, status, and to management all required changes. An extensive training schedule will be planned and monitored to ensure adherence to required security training regulations for all personnel in the agency. Training for use of the additional security tools will be planned for security personnel.

II.A.1(E)

Please list all the Lines of Business and Sub-Functions from the FEA Business Reference Model that this IT investment supports. The primary BRM mapping for this initiative should have been identified with the last six digits of the unique project (investment) identifier in section 53.8. For a list of the BRM Lines of Business and Sub-Functions, as well as guidance on mapping to the BRM, please see www.omb.gov. (Note: The Services for Citizens area and the Mode of Delivery area should be thought of collectively. If you identified your primary line of business/sub-function in section 53.8 as a Service for Citizen or a Mode of Delivery, at a minimum you should identify the corresponding Mode of Delivery/Service for Citizen that applies in this section).

Line of Business	Sub-function
Services for Citizens	
Homeland Security	Key Assets and Critical Infrastructure Protection
Income Security	General Retirement and Disability Unemployment Compensation Survivor Compensation
Health	Health Care Services
Mode of Delivery	
Public Goods Creation and Management	Information Infrastructure Management
Support Delivery of Services	
Planning and Resource Allocation	Budget Formulation Capital Planning Enterprise Architecture Strategic Planning Budget Execution Management Improvement
Internal Risk Mgmt and Mitigation	Contingency Planning Continuity of Operations
Management of Government Resources	
Supply Chain Management	Goods Acquisition Inventory Control Services Acquisition
Human Resource Management	Resource Training and Development
Administrative Management	Facilities, Fleet and Equipment Management Help Desk Services
Information & Technology Management	System Maintenance IT Infrastructure Maintenance IT Security Record Retention Information Management

II.A.2 Data

II.A.2(A) What types of data will be used in this investment? Examples of data types are health data, geospatial data, natural resource data, etc.

Not applicable

II.A.2(B) Does the data needed for this investment already exist at the Federal, State, or Local level? If so, what are your plans to gain access to that data?

Not applicable

II.A.2(C) Are there legal reasons why this data cannot be transferred? If so, what are they and did you address them in the barriers and risk sections above?

Not applicable

II.A.2(D) If this initiative processes spatial data, identify planned investments for spatial data and demonstrate how the agency ensures compliance with the Federal Geographic Data Committee standards required by OMB Circular A-16.

Not applicable

II.A.2(E) If this activity involves the acquisition, handling or storage of information that will be disseminated to the public or used to support information that will be disseminated to the public, explain how it will comply with your agency's Information Quality guidelines (section 515 requirements)?

Not applicable

II.A.2(F) Managing business information means maintaining its authenticity, reliability, integrity, and usability and providing for its appropriate disposition. Address how the system will manage the business information (records) that it will contain throughout the information life cycle.

Not applicable

II.A.3 Applications, Components, and Technology

II.A.3(A) Discuss this major investment in relationship to the Service Component Reference Model Section of the FEA. Include a discussion of the components included in this major IT investment (e.g., knowledge management, content management, customer relationship management, etc). For detailed guidance regarding components, please refer to <http://www.feapmo.gov> and the SRM Release Document.

The Infrastructure Modernization Initiative has a direct relationship to the Support Services component of the Services Component Reference Model. This initiative's primary goal is the internal reengineering of our databases and the restructuring of our system development environment. Applicable specific domains within the FEA Service Component Reference Models (SRM) and relationships follow:

Back Office Services Domain \ Asset\Materials Management \ Computers/Automation Management Component
Support Services Domain \ Security Management \ Intrusion Detection Component
Support Services Domain \ Systems Management \ License Management Component

II.A.3(B) Are all of the hardware, applications, components, and web technology requirements for this investment included in the Agency EA Technical Reference Model? If not, please explain.

Yes, all the hardware, applications and component requirements for the Infrastructure Modernization Initiative are included in the RRB's Enterprise Portfolio of Products and Standards.

II.A.3(C) Discuss this major IT investment in relationship to the Technical Reference Model section of the FEA. Identify each Service Area, Service Category, Service Standard, and Service Specification that collectively describes the technology supporting the major IT investment. For detailed guidance regarding the FEA TRM, please refer to <http://www.feapmo.gov>.

The Infrastructure Modernization Initiative establishes relationships with the Service Platforms & Infrastructure Service Area under the Service Category of Servers & Computers. The standard that has been established for the Mainframe platform at the RRB is IBM's Z\OS. This initiative also relates to the Component Framework Service Area – Security Standard.

II.A.3(D) Will the application leverage existing components and/or applications across the Government (i.e., FirstGov, Pay.Gov, etc). If so, please describe.

Not applicable

II.A.3(E) Financial Management Systems and Projects, as indicated in Part One, must be mapped to the agency's financial management system inventory provided annually to OMB. Please identify the system name(s) and system acronym(s) as reported in the most recent systems inventory update required by Circular A-11 section 52.4.

Not applicable

II. B. Security and Privacy

In order to successfully address this area of the business case, each question below must be answered at the investment (system/application) level, not at a program or agency level. Simply referring to security plans or other documents is not an acceptable response. For IT investments under development, security planning must proceed in parallel with the development of the system to ensure that IT security requirements and costs for the lifecycle of the investment are identified and validated. All IT investments must have up-to-date security plans and be fully certified and accredited prior to becoming operational. Anything short of a full certification and accreditation indicates that identified IT security weaknesses remain and need to be remedied and is therefore not adequate to ensure funding for the investment. Additionally, to ensure that requests for increased IT security funding are appropriately addressed and prioritized, the agency must identify: 1) current costs; 2) current IT security performance gaps; and 3) how the funding request will close the performance gaps. This information must be provided to OMB through the agencies' plan of action and milestone developed for the system and tied to the IT business case through the unique project (investment) identifier.

In addition, agencies must demonstrate that they have fully considered privacy in the context of this investment. Agencies must comply with Section 208 of the E-government Act and forthcoming OMB implementing guidance and, in appropriate circumstances, conduct a privacy impact assessment that evaluates the privacy risks, alternatives and protective measures implemented at each stage of the information life cycle. Agencies should utilize the guidance provided in OMB Memoranda in conducting the PIA and submit a copy, using the unique project (investment) identifier, to OMB at PIAkomb.eop.gov.

II.B.1. How is security provided and funded for this investment (e.g., by program office or by the CIO through the general support system/network)?

Funding for this investment, if approved, will be provided by the CIO through the general support systems.

II.B.1(A) What is the total dollar amount allocated to IT security for this investment in FY 2005? Please indicate whether an increase in IT security funding is requested to remediate IT security weaknesses, specifying the amount and a general description of the weakness.

The total dollar amount for IT security for this investment in FY 2005 is \$250,000. A portion of the total dollar amount of \$65,000 for security training and \$50,000 for risk management plans will also be used for this investment. The requested funding for security is not solely being requested to remediate the security weakness for implementing computer security incident reporting capability that is currently being addressed. However, the funding shall be also used to provide for additional security to the general support system infrastructure, thereby minimizing any risks to an acceptable level, and providing a measure of prevention for future security weaknesses.

II.B.2 Please describe how the investment (system/application) meets the following security requirements of the Federal Information Security Management Act, OMB policy, and NIST guidelines:

II.B.2(A) Does the investment (system/application) have an up-to-date security plan that meets the requirements of OMB policy and NIST guidelines? What is the date of the plan?

The investment has a security plan, the last update for this plan was August 29, 2002. A revision to the security plan will be required to reflect significant changes to this general support system.

II.B.2(B) Has the investment been certified and accredited (C&A)?

Note: Certification and accreditation refers to a full C&A and does not mean interim authority to operate. Additionally, specify the C&A methodology used (e.g., NIST guidelines) and the date of the last review.

Certification and accreditation will be required at a future phase of the life cycle for this investment.

II.B.2(C) Have the management, operational, and technical security controls been tested for effectiveness? When were most recent tests performed?

Not applicable at this time. However, the effectiveness of security controls will be tested and documented during the appropriate phase of the development life cycle for each system targeted for completion and implementation during each fiscal year covered for this investment.

II.B.2(D) Have all system users been appropriately trained in the past year, including rules of behavior and consequences for violating the rules?

Annual awareness training is provided for all systems users. Specialized training is provided based on job roles and responsibilities. Warning banners are displayed providing the usage policy and consequences for improper use upon connection to the operating system.

II.B.2(E) How has incident handling capability been incorporated into the system or investment, including intrusion detection monitoring and audit log reviews? Are incidents reported to DHS' FedCIRC?

The agency is developing the computer security incidence response plan that covers systems supported by this investment. This plan will be in place prior to the implementation of this investment. Reporting of incidents to DHS' FedCIRC is incorporated in the procedures of the current draft of this plan. This investment will provide the additional infrastructure necessary to assurance that the agency will have the ability to detect, prevent and respond to computer security incidents.

II.B.2(F) Is the system operated by contractors either on-site or at a contractor facility? If yes, does any such contract include specific security requirements required by law and policy? How are contractor security procedures monitored, verified, and validated by the agency?

No

II.B.3 How does the agency ensure the effective use of security controls and authentication tools to protect privacy for those systems that promote or permit public access?

Not applicable at this time. However, tests of security controls or authentication tools used to protect privacy of systems that promote or permit public access will be considered and incorporated in the project plans for this investment.

II.B.4 How does the agency ensure that the handling of personal information is consistent with relevant government-wide and agency policies?

Annual security awareness training is provided, and periodic audits, reviews and evaluations of IT systems are conducted. This investment requires personnel receive training and education above the awareness level. Provisions for this training will be included in the detailed investment plan.

II.B.5 If this is a new or significantly altered investment involving information in identifiable form collected from or about members of the public, has a Privacy Impact Assessment (PIA) for this investment been provided to OMB at PIAgomb.eop.gov with the investment's unique project (investment) identifier?

Not applicable to this investment.

II. C. Government Paperwork Elimination Act (GPEA)

Not applicable to this investment.

II.C.I If this investment supports electronic transactions or record-keeping that is covered by GPEA, briefly describe the transaction or record-keeping functions and how this investment relates to your agency's GPEA plan.

II.C.2 What is the date of electronic conversion from your GPEA plan?

II.C.3 Identify any OMB Paperwork Reduction Act (PRA) control numbers from information collections that are tied to this investment.

Exhibit 300: Part I: Capital Asset Plan and Business Case (All Assets)

Date of this Submission: August, 2003

Agency: U.S. Railroad Retirement Board

Bureau: U.S. Railroad Retirement Board

Location in the Budget:

Account Title:

Account Identification Code:

Program Activity:

Name of Investment: RRB's Modernization Blueprint

Unique Project (Investment) Identifier: 446-00-03-02-01-0051-00-112-081

(For IT investment only, see section 53. For all other, use agency ID system.) UPI should be created the same for all investments.

Investment Initiation Date: 2005

Investment Planned Completion Date: 2007

This Investment is: Initial Concept ___ Planning X Full Acquisition ___ Steady State ___ Mixed Life Cycle ___

Investment/useful segment is funded: Incrementally ___ Fully X

Was this investment approved by OMB for previous Year Budget Cycle? Yes ___ No X

Did the Executive/Investment Review Committee approve funding for this investment this year? Yes X No ___

Did the CFO review the cost goal? Yes X No ___

Did the Procurement Executive review the acquisition strategy? Yes X No ___

Did the Project (Investment) Manager identified in section 1.1) review this? Yes X No ___

Is this investment included in your agency's annual performance plan or multiple-agency annual performance plans? Yes ___ No X

NOTE: In the future, this investment will be note in the agency's annual performance plan.

Does this investment support homeland security? Yes ___ No X

If this investment supports homeland security, indicate by corresponding number which homeland security mission area(s) this investment supports?

1- Intelligence and Warning;

2 - Border and Transportation Security;

3 - Defending Against Catastrophic Threats;

4 - Protecting Critical Infrastructure and Key Assets;

5 - Emergency Preparedness and Response; or

6 - Other

Is this investment information technology? Yes X No ___

(see section 53 for definition)

For information technology investments only:

a. Is this project (investment) a financial management system? Yes ___ No X

(see section 53.2 for definition)

If so, does this project (investment) address a FFMIA compliance area? Yes ___ No ___

If yes, which compliance area?

b. Does this investment implement electronic transaction or record keeping that is covered by the Government Paperwork Elimination Act (GPEA)?

Yes No

If so, is it included in your GPEA plan (and does not yet provide an electronic option)?

Yes No

Does the investment already provide an electronic option?

Yes No

c. If the investment administers information in identifiable form about members of the public, was a privacy impact assessment submitted via PIA@omb.eop.gov with a unique project (investment) identifier?

Yes No

d. Was this investment reviewed as part of the FY 2003 Federal Information Security Management Act review process?

Yes No

d.1 If yes, were any weaknesses found?

Yes No

d.2 Have the weaknesses been incorporated into the agency's corrective action plans?

Yes No

e. Has this investment been identified as a national critical operation or asset by a Project Matrix review or other agency determination?

Yes No

e.1 If no, is this an agency mission critical or essential service, system, operation, or asset (such as those documented in the agency's COOP Plan), other than those identified as above as national critical infrastructures?

Yes No

f. Was this investment included in a Performance Assessment Rating Tool (PART) Review?

Yes No

f.1. Does this investment address a weakness found during the PART Review?

Yes No

SUMMARY OF SPENDING FOR PROJECT STAGES									
(In Millions)									
(Estimates for BY+1 and beyond are for planning purposes only and do not represent budget decisions)									
	PY-1 and Earlier	PY 2003	CY 2004	BY 2005	BY+1 2006	BY+2 2007	BY+3 2008	BY+4& Beyond	Total
Planning:									
Budgetary Resources				\$.825					\$.825
Outlays									
Acquisition :									
Budgetary Resources				\$ 1.168	\$ 2.836	\$ 1.150			\$ 5.154
Outlays									
Total, sum of stages:									
Budgetary Resources									
Outlays									
Maintenance:									
Budgetary Resources									
Outlays									
Total, All Stages:									
Budgetary Resources				\$ 1.993	\$ 2.836	\$ 1.150			\$ 5.979
Outlays									
Government FTE Costs				\$ 1.337	\$ 5.229	\$ 1.424			\$ 7.990

Note: Government FTE costs shall include government personnel considered direct and indirect labor in support of this investment. This includes the investment management IPT and any other government effort (e.g., programming effort for part of the overall investment, development effort) that contributes to the success of the investment. The costs include the salaries plus the fringe benefit rate of 32.8%. Agencies should reflect estimates of the costs of internal FTE supporting an IT investment, and should at a minimum include in FTE estimates of anyone spending more than 50% of their time supporting this investment. Persons working on more than one investment, whose contributions over all investments would exceed 50% of their overall time, should have their specific time allocated to each investment.

I. A. Investment Description

I. A.1 Provide a brief description of this investment and its status through your capital planning and investment control (CPIC) or capital programming "control" review for the current cycle.

This initiative is a key component of the RRB's Enterprise Architecture (EA) and associated EA Capital Asset Plan. The purpose of the RRB's Enterprise Architecture is to develop and implement an evolutionary, high-performance information technology architecture aligned with program and business goals that enable enterprise-wide data integration. It will help ensure a source of consistent, reliable, accurate, useful, and secure information. It will also support the effective delivery of services and benefits, and enable effective decision-making by agency personnel. The Enterprise Architecture supports RRB's overall strategic and performance goals as well as the President's Management Agenda reforms.

As stated in the agency's draft Strategic Plan for 2003-2008, the quality and experience of our workforce have been a major contributing factors to the agency's success. We have developed a strong experience base with 88 percent of our employees having 10 or more years of service at the agency. Consequently, significant investments in training, procedures and tool utilization have been minimal in recent years. However, statistics indicate that 42 percent of our current workforce will be eligible for retirement by 2008. This fact can turn a major strength into a significant weakness without planned intervention and subsequent actions.

The Modernization Blueprint initiative proposes tangible solutions that will play a paramount role in knowledge transfer and reducing the dependency on technologies with a limited, shrinking experience base. It will also enable us to create a development environment that facilitates reuse, adaptability, and componentization. This will enable the RRB to more easily and consistently, transfer institutional knowledge to electronic forms. In addition, this initiative provides for the assessment of our information technology systems to identify cost effective solutions, as well as opportunities for inter- and

extra-agency collaboration. This results in the identification of future efforts that will play a pivotal role in our target architecture effort. This initiative is comprised of following three components:

- **Database Management System Migration**

This project funds a migration from the current non-relational database environment to a relational database environment. It will include the transition from an hierarchical to a relational database and the subsequent conversion of 95% of our applications. This will be a multi-year effort, beginning with the research for migration tools and services. Once all databases and applications are successfully converted, the next step will be to restructure and consolidate the databases and applications to reduce redundancy and improve data accuracy and program execution.

- **Reengineering of the Application Development Environment**

This project funds a reengineering of our internal application development environment, moving us from a traditionally structured non-flexible mode of operation to a more responsive, rapid deployment mode that aligns specific types of requests with appropriate methodologies and procedures. This will be facilitated by the introduction and use of software and techniques to promote componentization, software modeling, quality control, targeted development methodologies and deployment of new project management and control software. This approach includes program structure improvements, program modularization and data reengineering.

- **Identify Opportunities for Redesign/Consolidation/Interoperability and Collaboration of Legacy Assets**

The changes this project brings to RRB's environment prepare the agency for the redesign of select applications that were developed in the 1980's and are neither easily adapted for Internet use nor lend themselves to rapid development methodologies. The result of these efforts to unify and simplify our core systems will improve interoperability and flexibility of applications, decrease the time and cost to develop and operate E-Government applications, and improve our ability to collaborate with agency partners.

Research and independent consultants have convinced us that reengineering of legacy assets should begin in fiscal year 2007, after the non-relational databases are migrated to relational databases. During the process of converting our databases to relational databases, we will identify opportunities for redesign and consolidation of our legacy assets.

Status of investment in RRB's Capital Planning and Investment Control(CPIC) Review Process

This investment will be proceeding from the select to the control phase of our Capital Planning and Investment Control process. The control reviews will ensure timely oversight, quality control and executive review and that the initiative is conducted in a disciplined well-managed and consistent manner. We will monitor established performance goals and quantifiable performance measures periodically reviewing and requiring updates to costs, schedule, benefits, risks, security and architectural compliance.

I. A. 2. What assumptions are made about this investment and why?
--

The assumptions made for this investment are as follows:

1. The appropriate project management techniques will be used to maintain existing system availability and functionality in order to minimize disruption of critical business functions.
2. The platform technical architecture must be modified, increasing storage capacity and incorporating an alternate environment, to minimize disruption to the production environment.
3. We will select application development methods and approaches that will enable quicker delivery of required functionality. This will allow for reassessment and modification of requirements without significantly impacting cost and schedule.
4. Applications developed will promote adaptability to changes in business needs and technology by encouraging modular design and reuse of components.
5. The project will be conducted with RRB resources from a matrix organization structure. This will increase the complexity of project planning, execution and control.
6. Key resources will be committed to the project.
7. In-house personnel will be trained and utilized when appropriate during each phase of this investment.
8. Authentication, security and privacy issues will be fully addressed.
9. Management attention will be provided due to the project's importance to the agency's mission, and the significant role in the administration of RRB's programs.

I. A. 3. Provide any other supporting information derived from research, interviews, and other documentation.

The Modernization Blueprint Initiative was developed with extensive collaboration of decision-makers throughout the RRB, research into industry (Gartner, Meta) best practices, discussions with consultants from AT&T Government Services and adherence to the RRB's IT objectives and architectural principles.

With regard to the CA-IDMS database management system, which the RRB currently uses almost exclusively, Gartner research indicates the outlook for IDMS has changed very little. The number of IDMS licenses in the industry has declined steadily. New license revenues for Computer Associates (CA) mainframe database management system (DBMS) products are trending downwards.

Gartner's overall view is that CA will provide adequate, but not strong support for IDMS as long as the install base remains large enough to generate maintenance revenue greater than CA's cost of maintaining the product. In other words, major releases will become fewer and further between. CA faces the same issue as its customers, which is growing scarcity of IDMS skills (for development and support) as the current crop of IDMS experts retire or migrate into more modern technologies. It is in CA's self-interest not to reveal any plans or contingencies for eventual de-support of IDMS until the latest possible moment. As the customer base shrinks, CA will be under pressure to raise maintenance fees for the remainder. It is likely that at some point, the cost to CA of continuing IDMS support and development will outweigh the revenues generated, and CA will arrive at a purely business decision to sunset the product.

In addition to our concerns over the long-term viability of IDMS, its non-relational structure imposes limitations on application development options. This has forced us to seek relational database alternatives. The RRB currently has two installed DBMS alternatives to IDMS. IBM's DB2 for the OS/390 was recently installed, primarily for the conversion of the Tesseract (payroll and personnel) system from the IDMS that will cease to be supported by the vendor after September 2003. A Microsoft SQL Server 2000 environment (development/testing/production) has also been recently created. SQL applications such as the eiStream document imaging system, Magic Help Desk software, Courion password management system and others are being migrated to this new environment.

Based on the above factors, we feel it is only prudent to begin the planning process, and position ourselves for the eventual move away from IDMS. Fortunately, IDMS is one of the few DBMSs for which tools are commercially available to convert programs to other DBMSs on other platforms such as IBM's DB2 and Microsoft's SQL. A "Request For Information" was released in late FY 2002 to determine the marketplace of such conversion tools and services.

Regarding the application development environment, the new architecture of .NET is a fundamental and ambitious enterprise-computing environment. The first user experiences with .NET Framework are encouraging. It appears that Microsoft has greatly improved its quality process in the last three years and has delivered relatively stable and dependable software. By starting the technology from scratch, Microsoft has given itself the opportunity for innovation in system design. Gartner suggests that by 2005, .NET will be technically proven to run large (more than 5,000 concurrent users) enterprise applications.

There are definite advantages in moving toward a .NET scenario. However, the successful adoption of reuse policies for legacy systems and the recognition of the mission-critical nature of these applications have revitalized the mainframe platform. Consequently, we have defined our future platform to take advantage of the strengths of both options. This will entail us focusing on platform interoperability and re-engineering the application interfaces to support programmatic integration with new standards-based solutions.

Our goal is to treat application development as an evolving process. Improving the application development process, learning new application development paradigms, extending legacy applications and skill training all represent the application development challenges of the next three to five years. Looking beyond simple and cosmetic legacy extension alternatives requires code understanding. Modifications may include simply changing "presentation" from 3270 to Active Server Page (ASP) applications, and then interfacing these programs with new applications. It may be an evolution of legacy programs to a more component-like form so that they can be used by the old (3270 presentation) and the new (Internet or intranet) without creating duplicate maintenance efforts. This level of change requires strong program understanding, code-slicing tools and a new implementation environment. Although the perception of objects vs. components is often debated, the underlying direction is the same — increasing the level of reuse and, therefore, of application assembly.

I.B. Justification (All Assets)

In order for IT investments to successfully address support of the President's Management Agenda and justification of the investment, the investment should be collaborative and include industry, multiple agencies, State, local, or tribal governments, use e-business technologies and be governed by citizen needs. If the investment is a steady state investment, then an E-Gov strategy review is underway and includes all the necessary elements. If appropriate, this investment is fully aligned with one or more of the President's E-Gov initiatives.

I.B.1 How does this investment support your agency's mission and strategic goals and objectives?

It supports Strategic objective II-C of the RRB Strategic Plan: Ensure effectiveness, efficiency, and security of operations.

I.B.2. How does it support the strategic goals from the President's Management Agenda?

The RRB is committed to a number of management strategies that will guide our efforts to accomplish this initiative. These strategies can be categorized along the lines of the President's Management Agenda, which is designed to promote management improvement throughout the Federal government in five key areas.

RRB's Modernization Initiative directly supports three of the five key areas, Expanded E-Gov, Strategic Management of Human Capital, and Competitive Sourcing.

The planned improvement in IT operations accomplished by this initiative will enable us to respond rapidly to changing business requirements, such as legislative changes and technological advances. It will facilitate our priorities in the coming years which include implementing a variety of E-Government initiatives within the framework of our overall information technology architecture, in a secure and stable electronic environment. Our focus will remain on simplifying the delivery of services and making it possible for our customers, businesses and government agencies to easily obtain information and service from the RRB. The outcomes of this initiative will help us to achieve these goals.

In the area of Strategic Management of Human Capital, this initiative supports reshaping and realigning of our workforce and promotes knowledge transfer and succession planning.

This initiative will also involve significant acquisitions and contractual services. The RRB's acquisition strategy supports the Competitive Sourcing guidelines of the President's Management Agenda. The agency is committed to meeting the Federal goals and objectives for competitive sourcing. Procurements related to this initiative will use competitive sourcing for acquisitions and services using GSA schedule buys, GWACS or firm fixed price.

I.B.3. Are there any alternative sources in the public or private sectors that could perform this function?

No, there are no alternatives sources in the public or private sector that can provide the entire function for this initiative. Knowledge of RRB's business, data, applications, systems, infrastructure and their interdependencies is needed for this function, but we do plan to use COTS software and contractor assistance for the migration and re-engineering efforts.

I.B.4. If so, explain why your agency did not select one of these alternatives.

Not applicable, based on response to previous question.

I.B.5. Who are the customers for this investment?

The customers for this investment are the RRB annuitants and unemployment and sickness claimants, covered railroad and rail labor employers, Board employees, and other agencies. The improvements in infrastructure and information security will create an environment that supports more efficient and effective IT services and provide additional protection of our customers information.

I.B.6. Who are the stakeholders of this investment?

The stakeholders in this investment are RRB's staff, rail labor and rail management, and other agencies.

I.B.7. If this is a multi-agency initiative, identify the agencies and organizations affected by this initiative.

This is not a multi agency initiative. However regression and system testing will include several agencies with whom we exchange data. The affected agencies are the SSA, Treasury, IRS, and the Centers for Medicare and Medicaid Services (CMS).

I.B.7(A) If this is a multi-agency initiative, discuss the partnering strategies you are implementing with the participating agencies and organizations.

Not applicable, based on response to previous question.

I.B.8. How will this investment reduce costs or improve efficiencies?

- This investment provides for collaborative programming efforts and institutes a reuse policy for program components. It will reduce the over all time to production, thereby requiring less man hours per project. It will also improve efficiency, by decreasing the amount of redundant modules, making change management more efficient.
- The database conversion effort will reduce dependency on technologies with limited and shrinking experience bases.
- This initiative will facilitate interoperability, data sharing, reuse, and cross-platform solutions.
- It will allow the RRB to be vendor neutral to a greater extent.
- It allows for quicker reassessments and modifications in the application development environment without significantly impacting cost and schedules.
- It will facilitate transferable skill sets.
- It adheres to our architecture principles and industry best practices.
- It is a essential to achieving the RRB's "one and done" strategic goal in which we endeavor to meet a customers need with a single interface rather than through multiple hand offs.

I.B.9. List all other assets that interface with this asset. Have these assets been reengineered as part of this investment? Yes/No

The infrastructure, data management and e-government services interface with this investment. These assets will require reengineering. Funding for the reengineering of the infrastructure, metadata and e-government initiatives are being requested separately.

I.C. Performance Goals and Measures (All Assets)

In order to successfully address this area of the business case, performance goals must be provided for the agency and be linked to the annual performance plan. The investment must discuss the agency's mission and strategic goals, and performance measures must be provided. These goals need to map to the gap in the agency's strategic goals and objectives that this investment is designed to fill. They are the internal and external performance benefits this investment is expected to deliver to the agency (e.g., improve efficiency by 60%, increase citizen participation by 300% a year to achieve an overall citizen participation rate of 75% by FY 2xxx, etc.). The goals must be clearly measurable investment outcomes, and if applicable, investment outputs. They do not include the completion date of the module or investment, or general goals, such as, significant, better, improved that do not have a quantitative or qualitative measure.

Agencies must use Table 1 below for reporting performance goals and measures for existing investments that were initiated prior to FY 2005. The table can be extended to include measures for years beyond FY 2004.

Table 1						
Fiscal Year	Strategic Goal(s) Supported	Existing Baseline	Planned Performance Improvement Goal	Actual Performance Improvement Results	Planned Performance Metric	Actual Performance Metric Results
2005	Strategic objective II-C: Ensure effectiveness, efficiency, and security of operations	IDMS databases	Generate RFP or SOW for database migration, evaluate responses, award contract for doing migration of IDMS databases		Generate RFP or SOW, award contract	
2005	Strategic objective II-C: Ensure effectiveness, efficiency, and security of operations	IDMS databases	Generate database migration project plan to move from IDMS to DB2		Complete migration project plan	
2005	Strategic objective II-C: Ensure effectiveness, efficiency, and security of operations	Do not own DB2 and Visual Studio.Net tools WINGS project management software	Purchase DB2, Project Management and Visual Studio.Net tools		100% implementation	
2005	Strategic objective II-C: Ensure effectiveness, efficiency, and security of operations	Staff is inexperienced in DB2, Project management software and Visual Studio.Net	Training of staff that will initially assist consultants in converting applications in the transition effort		Complete training of selected employees	

Table 1

Fiscal Year	Strategic Goal(s) Supported	Existing Baseline	Planned Performance Improvement Goal	Actual Performance Improvement Results	Planned Performance Metric	Actual Performance Metric Results
2006	Strategic objective II-C: Ensure effectiveness, efficiency, and security of operations	Do not own DB2 productivity and Visual Studio.Net tools	Purchase productivity tools and Visual Studio.Net		100% implementation	
2006	Strategic objective II-C: Ensure effectiveness, efficiency, and security of operations	Staff is inexperienced in DB2 and Visual Studio.Net	Training of broader base of programming staff who will initiate programming efforts in the target environment		Complete training of selected employees	
2006	Strategic objective II-C: Ensure effectiveness, efficiency, and security of operations	IDMS databases	Migration to relational database		Complete migration of IDMS databases	
2007	Strategic objective II-C: Ensure effectiveness, efficiency, and security of operations	Do not own DB2 Administration and Visual Studio.Net tools	Purchase Database Administration for DB2 Suite and Visual Studio.Net		100% implementation	
2007	Strategic objective II-C: Ensure effectiveness, efficiency, and security of operations	Staff is inexperienced in DB2 and Visual Studio.Net	Training of all remaining programming staff		Complete training of selected employees	
2007	Strategic objective II-C: Ensure effectiveness, efficiency, and security of operations	IDMS databases	RFP for contractor to plan normalization of relational database, evaluate responses, award contract		Complete RFP, award contract	
2007	Strategic objective II-C: Ensure effectiveness, efficiency, and security of operations	IDMS databases	Research/Assess Normalization on relational databases		Do research and assessment of relational databases	

All new IT investments that are development, modernization, or enhancement (DME) for 2005 and beyond must use Table 2 and are required to use the FEA Performance Reference Model. The PRM Version 1.0, available at www.feapmo.gov, includes detailed guidance about how to incorporate PRM Indicators into the performance goals and measures table below. Please use the Table 2 and the PRM to identify the performance information that pertains to the major IT Investment. Ensure there is a complete tie-in to the strategic goals and objectives described in section I.B.1.

The PRM has not been released as of the date this Exhibit 300 was completed.. The FEAPMO website state that *The Performance Reference Model (PRM) is scheduled to be released later this year.*

Once the PRM has been released, we will use it to identify the performance information pertaining to this initiative.

Table 2						
Fiscal Year	Measurement Area	Measurement Category	Measurement Indicator	Baseline	Planned Improvements to the Baseline	Actual Results
2005						
2005						
2006						
2006						

I.D. Project Management (Investment Management) [All Assets]

The OMB Circular A-11, Part 7, Capital Programming Guide, and the OPM Project Management Guidance "Interpretive Guidance for Project Manager Positions, discuss project management structures, responsibilities, and qualifications that contribute to successful achievement of cost, schedule, and performance goals.

I.D.1. Is there a project (investment) manager assigned to the investment?

Yes No

If so, what is his/her name?

Nancy LaRocque & Scott Palmer

I.D.1(A) Identify the members, roles, qualifications, ad contact information of the in-house and contract project (investment) managers for this project (investment).

Name: Nancy LaRocque **Role:** IT Project Manager

Contact Info

(312) 751- 4720
844 N Rush Street 3rd Floor
Chicago, IL 60611

Qualifications:

B.S.

JDS

Over 10 years experience in IT project management at RRB from both the business and IT perspective.

Chief of Application Design

Information Systems Project Management

American Management Association

July 26-28, 1993

Systems Analysis and Design for Information and Business Professionals

American Management Association

September 20-23, 1993

Experience as COTR

Name: Scott Palmer **Role:** IT Project Manager

Over 10 years experience in IT project management at RRB from both the business and IT perspective.

Qualifications:

Completed the following programs/classes related to IT Project Management:

Council for Excellence in Government
E-Gov Fellows Program
October 2002 – September 2003

Management of Information Technology
May 17 – 21, 1999
Office of Personnel Management
Western Management Development Center
Mark A. Forman – Principal Instructor

Project Management for IT Professionals
American research Group
February 3 – 5, 1998

Contact Info

844 N Rush Street 3th Floor
Chicago, IL 60611

Name: Elayne Schempp **Role:** Business Project Manager

Contact Info

(312) 751- 4720
844 N Rush Street 3rd Floor
Chicago, IL 60611

Qualifications:

Chief of Systems and Technology Development

20 years experience managing large development projects

Experience as COTR (Contracting Officer's Technical Representative)

I.D.2. Is there a contracting officer assigned to the project (investment)?

Yes X No

If so, what is his/her name?

Henry Valiulis
Director of Administration

I.D.3 . Is there an Integrated Project Team?

Yes X No

I.D.3.A. If so, list the skill set represented.

Project Manager
- Business manager
- Technical manager

Information Technology Supervisor

Business Team
- Program Benefits Officer
- Senior Policy & Systems Analysts
- Policy & Systems Analyst
- Supervisory Data Manager

- Senior Operations Analyst
- Stat. Data Operations Analysts

Development Team

- Supervisory Web Developer
- Senior Software/Web Developer
- Software/Web Developer

Advisors

- Data Administrator
- DBA Contact
Supervisory Database Administrator
Database Administrator
- Security Contact
Chief Security Officer
It Security Analyst
- Infrastructure Contacts
Senior Systems Engineer
Systems Network Engineer
- Records Management Contact
- Architecture Contact
- Procurement Contacts
Contracting Officer
Contracts Specialist

I.D.4. Is there a sponsor/owner for this investment?

Yes X No

I.D.4(A) If so, identify the sponsor/process owner by name and title and provide contact information.

Kenneth J. Zoll

Chief Information Officer
U.S. Railroad Retirement Board
844 N Rush Street
3rd Floor
Chicago, IL 60611
312 751-7191
Ken.Zoll@rrb.gov

Dorothy Isherwood

Director of Programs
U.S. Railroad Retirement Board
844 N Rush Street
5th Floor
Chicago, IL 60611
312 751- 4860
Dorothy.Isherwood@rrb.gov

I.E. Alternatives Analysis [All Assets]

In order to successfully address this area of the business case, you must include three viable alternatives that were compared consistently, identify the alternative chosen, and provide benefits and reasons for your choice. Agency must identify all viable alternatives and then select and report details on the top three viable alternatives. Use OMB Circular A-94 for all investments and the Clinger Cohen Act for IT investments for the criteria to be used for Benefit/Cost Analysis. Agency must include the minimum criteria to be applied in considering whether to undertake a particular investment, including criteria related to the quantitatively expressed projected net, risk-adjusted return on investment, and specific quantitative and qualitative criteria for comparing and prioritizing alternative investments. For IT investments, agencies should use the Federal Enterprise Architecture (FEA) to identify potential alternatives for partnering or joint solutions that may be used to close the identified performance gap.

I.E. 1. Describe the alternative solutions you considered for accomplishing the agency strategic goals or for closing the performance gap that this investment was expected to address. Describe the results of the feasibility/performance/benefits analysis. Provide comparisons of the returns (financial and other) for each alternative.

The RRB considered three approaches as we evaluated modernization needs targeted at mitigating risks, while promoting and developing the most responsive and effective IT environment to meet the current and future strategic goals of the agency. Our overall goal was to position ourselves to achieve an architecturally sound environment adhering to principles of interoperability, reuse, collaboration, responsiveness and integration as related to our databases, our application development environment and our information technology systems.

The following criteria was used to evaluate each of the proposed solutions.

The solution should:

- Reduce dependency on technologies with limited and shrinking experience bases.
- Facilitate interoperability, data sharing, reuse, and cross-platform solutions.
- Be vendor neutral as much as possible.
- Allow reassessment and modification of application development environment with transferable skill sets.
- Facilitate collaborative efforts.
- Facilitate changes to application development requirements without significantly impacting cost and schedule.
- Adhere to our architecture principles and industry best practices.

Alternative 1: Maintain current database, applications development, work flow and programs environment.

The current environment consists of computer applications that are 95% dependent on IDMS databases. The application development environment consists of distinct mainframe and LAN groupings including personnel, procedures and processes. There is limited interoperability, reuse or consistency, across groups. There is limited use of middleware and screen scrapers to facilitate cross platform functionality. Redundancies in applications exist.

Alternative 2: Enhance the use of Middleware and Screen scrapers to promote an interoperable environment and enhance user-friendly front ends.

This solution poses significant risk. It could be used to expand our capability to develop cross-platform and e-government solutions. Total cost of ownership would increase over time given that additional overhead would be incurred for required software, processing, and maintaining duplicate databases and programs in multiple environments. The greatest risk is that this solution precludes the capability of moving away from almost total dependency on a database technology that limits interoperability, has a shrinking user base and in which skilled expertise is becoming increasingly limited. An additional risk factor that will increase over time is the shrinking base of partnerships with middleware vendors and appropriate tools to facilitate interoperability.

The skill set needed by developers in our current environment are distinct and don't port well in different environments. This environment would curtail the ability to apply modernization techniques from an enterprise perspective to our system development environment. It supports duplication and independence, and limits responsiveness and interactive capabilities.

Alternative 3: RRB Modernization Blueprint Initiative.

This solution is a three-pronged approach to modernizing our interdependent information technology development and application environment. It incorporates a database conversion effort from IDMS to a relational database, probably DB2 since this database is already in-house. This change would facilitate interoperability, re-use, collaborative efforts across platforms while reducing redundancy. This solution also includes the re-engineering of the application development environment. This would incorporate the introduction and use of software and techniques to promote componentization, software modeling, quality control, and targeted development methodologies that can be applied and capitalized on across skill sets and across platforms. These changes would prepare the agency for redesign of select applications that were developed in the 1980's and are neither easily adapted for Internet use nor lend themselves to rapid development methodologies. We plan to identify redesign, consolidation, interoperability and collaborative opportunities as we modernize our database and system development environment.

Future, subsequent efforts will be undertaken as a result of this identification process which will unify and simplify our core systems, improve interoperability and flexibility of applications, decrease the time and cost to develop and operate E-Government applications and improve our ability to collaborate with agency partners.

I.E. 1(A) Discuss the market research that was conducted to identify innovative solutions for this investment (e.g., used an RFI to obtain four different solutions to evaluate, held open meetings with contractors to discuss investment scope, etc.). Also describe what data was used to make estimates such as, past or current contract prices for similar work, contractor provided estimates from RFIs or meetings, general market publications, etc.

Alternative	Description
Alternative 1	Studied Gartner Research on the viability of IDMS and market trends; Used MetaGroup research on architecture principles and guidelines emphasizing collaboration, responsiveness, interactive and proactive environments. Studied MetaGroup research on future trends. Performed the Gap Analysis phase of our Enterprise Architecture.
Alternative 2	Studied Gartner Group research on the viability of IDMS and market trends; Used MetaGroup research on architecture principles and guidelines emphasizing collaboration, responsiveness, interactive and proactive environments. Studied MetaGroup research on future trends. Explored multiple middleware options that were compatible with our environment. Performed the Gap Analysis phase of our Enterprise Architecture. Extrapolated costs based on current costs used in environment and cost of compatible middleware tools.
Alternative 3	Studied Gartner Group research on the viability of IDMS and market trends; Used MetaGroup research on architecture principles and guidelines emphasizing collaboration, responsiveness, interactive and proactive environments. Studied MetaGroup research on future trends. Completed RFI on IDMS Database Conversion services. Researched and had contractor from AT&T Government Services provide estimates for effort of a similar size and level of complexity.

I.E.2. Summarize the results of your life-cycle cost analysis performed for each investment and the underlying assumptions.

This life-cycle cost analysis covers a compact life cycle of three years. The three year analysis covered FY 2005 through FY 2007. OMB Circular A-94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs was used. Accordingly, costs provided are present value dollars. Consequently, this allows the comparison of alternatives based on same year dollars, avoiding inconsistencies created by inflation or deflation of the dollars. This is done by discounting future year dollars by a discount factor, which is released by OMB. The discounts rates released in Appendix C of the A-94 circular, revised January 2003 were used.

The first alternative, Maintain present database, poses the greatest amount of risk. It precludes the capability of moving away from almost total dependency on a database technology that limits interoperability, has a shrinking user base and in which skilled expertise is becoming increasingly limited. It severely limits the agency's ability to respond to the Clinger-Cohen directive to reach the target architecture. It also significantly limits our capability to further interoperability of applications, collaborative efforts, inter-agency and cross-agency efforts, and to successfully develop and deploy e-government initiatives.

Because the environment lacks reusable components or streamlined processes and procedures, it increases time to production because the environment is unable to rapidly respond to mandated and requested changes of new development efforts. Many peripheral products that once supported the IDMS database have ceased support.

This solution does not meet any of the criteria to effect an architecturally sound environment.

The second alternative, Enhance the use of Middleware and Screen scrapers, minimally meets our stated evaluation. It is not a viable alternative that will effect the modernization needs to morph us into a sound architectural environment. It can be used to facilitate interoperability and cross-platform solutions. However, it is a time-consuming difficult approach because of our hierarchical database, lack of available plug-ins and lack of vendor supported tools that interface with our environment. It does not support shared skill sets. It does not address the identified risk factors and as stated would increase total cost of operation.

Cost Elements	Alternative 1	Alternative 2	Alternative 3
Planning & System Development	\$0.00	\$0.5	\$1.9
System Implementation and Acquisition	\$0.00	\$0.3	\$2.8
Operation and Maintenance	\$0.17	\$0.3	\$1.1
Total	\$0.17	\$1.1	\$5.8

Note: Costs are shown in millions.

I.E.3. Which alternative was chosen and why?

The third alternative, the Modernization Blueprint initiative, was chosen because it proposes tangible solutions that will play a paramount role in knowledge transfer and reducing the dependency on technologies with a limited, shrinking experience base. It will also enable us to create a development environment that facilitates reuse, adaptability, and componentization. This will enable the RRB to more easily and consistently transfer institutional knowledge to electronic forms. In addition, this initiative provides for the assessment of our information technology systems to identify cost effective solutions, as well as opportunities for inter- and extra-agency collaboration. This results in the identification of future efforts that will play a pivotal role in our target architecture effort.

The three components of this initiative comprise the core requirements needed to achieve the target Enterprise Architecture Database, Application Development, and Legacy Asset strategies. This initiative will provide fundamental support in meeting the RRB’s strategic objectives.

I.E. 3(A) Are there any quantitative benefits that will be achieved through this investment (e.g., systems savings, cost avoidance, stakeholder benefits, etc)? Define the Return on Investment (ROI).

- The adoption of this initiative will improve accuracy by reducing redundancy of program modules.
- This investment provides for collaborative programming efforts and institutes a reuse policy for program components. It will reduce the over all time to production, thereby requiring less man hours per project. It will also improve efficiency, by decreasing the amount of redundant modules, making change management more efficient.
- The database conversion effort will reduce dependency on technologies with limited and shrinking experience bases.
- This initiative will facilitate interoperability, data sharing, reuse, collaborative efforts, and cross-platform solutions.
- It will allow the RRB to be vendor neutral to a greater extent.
- It allows reassessment and modification of application development environment with transferable skill sets.
- It facilitates collaborative efforts.
- It facilitates changes to application development requirements without significantly impacting cost and schedule.
- It adheres to our architecture principles and industry best practices.

Present Value by Year and Payback Period Calculations:

YEAR =	FY05	FY06	FY07	Total Life-Cycle
Savings/ Cost Avoidances	\$0.9	\$1.0	\$1.7	\$8.7
Investment Cost (Risk- Adjusted)	\$1.9	\$2.8	\$1.1	\$7.9
Net Present Value (NPV)	\$0.0	\$0.0	\$0.6	\$0.6
Return on Investment (ROI) (for lifecycle not by year)				\$1.1
Payback Period				6 year

Notes: Cost are shown in millions.

Payback period post dates the years addressed in this budget request.

I.E. 4. What is the date of your cost benefit analysis?

September 2003

I. F. Risk Inventory and Assessment (All Assets)

In order to successfully address this issue on the business case and capital asset plan, you must have performed a risk assessment at the initial concept, included mandatory risk elements defined below and demonstrate active management of the risk throughout the life-cycle of the investment.

For all investments, both IT and non-IT, you must discuss each of the following risks and present your plans to eliminate, mitigate, or manage risk, with milestones and completion dates. If there is no risk to the investment achieving its goals from a risk category, indicate so. If there are other risks identified, include them. Risk assessments should include risk information from all stakeholders and should be performed at the initial concept stage and then monitored and controlled throughout the life-cycle of the investment. Risk assessments for all investments must include: 1) schedule; 2) initial costs; 3) life-cycle costs; 4) technical obsolescence; 5) feasibility; 6) reliability of systems; 7) dependencies and interoperability between this investment and others; 8) surety (asset protection) considerations; 9) risk of creating a monopoly for future procurements; 10) capability of agency to manage the investment; and 11) overall risk of investment failure.

In addition, for IT investments, risk must be discussed in the following categories 12) organizational and change management; 13) business; 14) data/info; 15) technology; 16) strategic; 17) security; 18) privacy; and 19) project resources. For security risks, identify under the Description column the level of risk as high, medium, or basic. What aspect of security determines the level of risk, i.e., the need for confidentiality of information, availability of information or the system, reliability of the information or system? Under the Current Status column, list the milestones remaining to mitigate the risk.

Date Identified	Area of Risk	Description	Probability of Occurrence	Strategy for Mitigation	Current Status
August 2003	Schedule	Ability to obtain required funding and resources will affect schedule	High	-Endorsement by Executive Committee - Prepare and tightly manage to schedule	In process, FY 05 budget documents being prepared
August 2003	Initial costs	Accuracy of initial costs	Medium	-Thorough analysis of cost estimates -Coordination with procurement -Use of industry benchmarks	Study of cost and resource requirements completed, reviewed and approved
August 2003	Life-cycle costs	Funding is on a yearly basis, May not receive sufficient funds to complete	Medium	-Work with agency executives and OMB to maintain project funding levels -Carefully scope project -Closely monitor project and budget	Ongoing, Project management and oversight in place
August 2003	Technical obsolescence	Ensure currency of technology solution	Low	-Maintain and update the RRB Enterprise Architecture	Ongoing, RRB EA and Capital Plan approved and processes in place
August 2003	Feasibility	Make certain of feasibility from technical and management perspective	Low	-Conduct industry baseline studies -Maintain a robust CPIC process and updated EA	Ongoing, CPIC and EA in place and operational. Studies will be made as needed
August 2003	Reliability of systems	Failure and system interruption is unacceptable for the processes supported	Medium	-Provide adequate system recovery, backup and alternate processing capability	Ongoing, Processes in place, Review of adequacy on annual basis

Date Identified	Area of Risk	Description	Probability of Occurrence	Strategy for Mitigation	Current Status
August 2003	Dependencies and interoperability between this investment and others	Maintain interoperability of investments and systems	Medium	-Maintain a robust CPIC process and updated EA	Ongoing, RRB EA and Capital Plan approved and processes in place
August 2003	Surety (asset protection) considerations	RRB systems may be compromised	Low	-Evaluate and adopt security controls in plans	Planned, This will be part of the project planning and development phases
August 2003	Risk of creating a monopoly for future procurements	Risk if more than slight modification of COTS	Low	-Use of open architecture components - Work within the agency and government community	Ongoing, Enterprise Architecture in use. Active participation with agencies
August 2003	Capability of agency to manage the investment	Commitment from Executive Committee required to effectively manage the investment	Low	-Actively engaged executive steering committee that will act as a governing body -Viable capital planning process is also being used	Ongoing, Executive Committee meets every week, Senior agency staff will be actively involved with the RRB Modernization
August 2003	Overall risk of investment failure	Must continually manage from an Enterprise Architecture perspective	Low	-Maintain Executive Committee involvement -Obtain and maintain stakeholder and customer buy-in	Ongoing, Executive Committee meets every week, Senior agency staff will be actively involved with the RRB Modernization
August 2003	Organizational and change management	Changes in mission and organization can threaten investment	Low	-Maintain Executive Committee involvement	Ongoing, Executive Committee meets every week, Senior agency staff will be actively involved with the RRB Modernization
August 2003	Business	Ability to identify and streamline business processes	Medium	-Established, approved and vetted concepts that drive the BPR and requirements gathering activities	Planned, This activity will primarily occur during the applications redesign phases
August 2003	Data/info	Must have agreement on content and structure of the data	Medium	-Utilize RRB Enterprise Architecture with active program participation	Ongoing, Communications/ outreach in process Enterprise Architecture in use

Date Identified	Area of Risk	Description	Probability of Occurrence	Strategy for Mitigation	Current Status
August 2003	Technology	Technology must be kept current and meet the requirements of agency	Medium	-Utilize RRB Enterprise Architecture with active program participation -Request needed funding	Ongoing, Communications/ outreach in process, Enterprise Architecture is in use
August 2003	Strategic	Timing of implementation of capabilities could affect ability to maintain momentum and support	Low	-A staged implementation of the modules will be completed at the earliest possible date -Use of flexible development to facilitate minimum impact due to changes based on delays external to the scope of control	Ongoing' Project planned from EA perspective' CPIC control process will ensure proper execution of project phases
August 2003	Security	Dependent upon well defined system level security requirements and security specifications	Low	-System security plan completed, updated and utilized that links to site security plan	Ongoing, Site Security plan completed, Initial security plans scheduled
August 2003	Privacy	Privacy aspects of claimants must be assured	Low	-Employ up-to-date techniques for protection of sensitive information and protect against disclosure	Scheduled, This will be part of the overall project planning
August 2003	Project resources	Project success requires individuals with the right skill mix and involvement of all affected organizations	Medium	-Maintain Executive Committee involvement	Ongoing, Executive Committee meets every week, Senior agency staff will be actively involved with the RRB Modernization

I.F.1. What is the date of your risk management plan?

We plan to complete the plan by August 2004.

I.G. Acquisition Strategy

In order to adequately address this area of the business case and capital asset plan you must employ a strong acquisition strategy that mitigates risk to the Federal government, accommodate Section 508 as needed, and use performance based contracts and (SOWs). If you are not using performance based fixed price contracts, your acquisition strategy should clearly define the risks that prompted the use of other than performance based contracts and SOWS. Finally, your implementation of the Acquisition Strategy must be clearly defined.

I.G.1 Will you use a single contract or several contracts to accomplish this investment?

Multiple

I.G.1(A) What is the type of contract/task order if a single contract is used?

Not Applicable, based on previous answer.

I.G.1(B) If multiple contract/task orders will be used, discuss the type, how they relate to each other to reach the investment outcomes, and how much each contributes to the achievement of the investment cost, schedule and performance goals. Also discuss the contract/task order solicitation or contract provisions that allow the contractor to provide innovative and transformational solutions.

An acquisition strategy has been designed to manage the procurement risk associated with developing and implementing the RRB Modernization Blueprint Initiative. This strategy is based upon the following criteria:

- Use existing, in-place contracts when appropriate.
- Pay the lowest price for products/services commensurate with quality, service, delivery, and reliability.
- Closely manage solicitations and the resulting contracts.
- Use outside sources and partnerships, when possible to achieve our mission.

The RRB will leverage existing contracts to the extent feasible in an effort to limit the amount of time and effort required for establishing contractual vehicles. This includes the use of existing RRB contracts with Information Technology products and/or services companies (Sentinel, IBM, AT&T, and Sprint).

I.G.2 For other than firm-fixed price, performance-based contracts, define the risk not sufficiently mitigated in the risk mitigation plan, for that contract/task order, that requires the Government to assume the risk of contract achievement of cost, schedule and performance goals. Explain the amount of risk the government will assume.

Acquisition is done by competitive sourcing using GSA schedule buys, GWACS or firm fixed price. When the aforementioned instruments are not used, the government risk will be limited to that incurred by the use of Time and Material Task orders under Agreements or IDIQ Contracts with defined deliverables based on mutually agreed to scopes of work. The Task orders will be issued with price ceiling based on evaluated contractor proposals with labor categories, estimated hours, and the established price rates. These measures minimize risk to the government.

I.G.3 Will you use financial incentives to motivate contractor performance (e.g. incentive fee, award fee)?

Typically incentive contracts are not employed. Negotiated firm fixed price contracts and competitive procurements from schedules and multi-agency contracts are used.

I.G.4 Discuss the competition process used for each contract/task order, including the use of RFP's, schedules or other multiple agency contracts, etc?

Acquisition is done by competitive sourcing using GSA schedule buys, GWAC awards or firm fixed price contracts or agreements. The RRB would use GWAC contract competitive procedures, FAR part 8.404 GSA contract comparison procedures or the FAR part 15 Competitive proposal procedure as appropriate.

I.G.5 Will you use commercially available or COTS products for this investment?

Yes, COTS and commercially available hardware and software will be used.

I.G.5(A) To what extent will these items be modified to meet the unique requirements of this investment?

They will not be modified. The RRB does not generally procure COTS hardware or software packages, which must be modified to meet Government requirements. Only configuration of the COTS hardware or software is performed to optimize the performance in the RRB environment.

I.G.5(B) What prevented the use of COTS without modification?

RRB Procurement policy is that COTS are not modified.

I.G.6 What is the date of your acquisition plan?

Initial acquisition planning has begun. We will solidify the acquisition plan once the budget is approved.

I.G.7 How will you ensure Section 508 compliance?

The solicitation specifies the 508 certificates that the vendor must meet. Vendors provide the required certification for any hardware, software or programming requested as part of the procurement proposal. This RRB Information Technology staff under the leadership of the designated RRB COTR verifies the compliance with the section 508 compliance through the testing and acceptance process established in the RRB.

I.G.8. Acquisition Costs:

I.G.8(A) For budget year, what percentage of the total investment is for hardware acquisition?

Modernization Blueprint: 0%

I.G.8(B) For budget year, what percentage of the total investment is for software acquisition?

Modernization Blueprint: 28%

I.G.8(C) For budget year, what percentage of the total investment is for services acquisition?

Modernization Blueprint: 72%

I.H. Project (Investment) and Funding Plan

In order to successfully address this section of the business case, you must demonstrate use of an Earned Value Management System (EVMS) that meets ANSIIEIA Standard 748, for both government and contractor costs, for those parts of the total investment that require development efforts (e.g., prototypes and testing in the planning phase and development efforts in the acquisition phase) and show how close the investment is to meeting the approved cost, schedule and performance goals. Information on EVMS is available at <http://www.acq.osd.mil/pm>. For those investments in the operations/steady state phase, you must perform an operational analysis as defined in the Capital Programming Guide to demonstrate how close the investment is to achieving the expected cost, schedule and performance goals for this phase. Program status information in this section must include both the contractor's part of the investments overall costs and milestone requirements as well as the government's costs and milestone requirements to successfully complete the investment phase, segment or module being reported.

I.H.1. Description of performance-based management system (PBMS) needs to be completed

Explain the methodology used by the agency to analyze and use the earned value performance data to manage performance. Describe the process you will use or used to verify that the contractor's project management system follows the ANSIIEIA Standard 748-A. If the investment is operational (steady state), define the operational analysis system that will be used. If this is a mixed life-cycle investment with both operational and development/modernization/enhancement (DME) system improvement aspects, EVMS must be used on the system improvement aspects of the investment and operational analysis on the operations aspects. Using information consistent with the work breakdown structure (WBS), provide the information requested in all parts of this section.

The RRB has initiated steps to require an earned value analysis as a crucial element for project management. We have incorporated it as a requirement within our Capital Planning and Investment Control process. MS Project will be used to track and manage actual cost, schedule and performance against the OMB-approved baseline.

I.H.2. Original baseline (OMB-approved at investment outset)

What are the cost and schedule goals for this phase or segment/module of the investment (e.g., what are the major investment milestones or events; when will each occur; and what is the estimated cost to accomplish each one)? Also identify the funding agency for each milestone or event if this is a multi-agency investment. For operational or steady state projects, complete one line on the chart for each year of this phase. If the project is mixed life-cycle there will be two parts to the chart; one for the O&M portion and one for the developmental portion using EVMS. If this is a multi-agency investment or one of the President's E-Gov initiatives, use the detailed investment plan with milestones on the critical path, to identify agency funding for each module or milestone. (This baseline must be included in all subsequent reports, even when there are OMB-approved baseline changes shown in I.H.3).

Cost and Schedule Goals: Original Baseline for a Phase/Segment/Module of Project (Investment)					
Description of Milestone	Schedule			Planned Cost	Funding Agency
	Start Date	End Date	Duration (in days)		
Generate RFP or SOW for database migration , evaluate responses , award contract for doing migration	10-1-04	2-28-05	100		RRB
Generate project plan with services of a contractor	3-1-05	5-31-05	65	\$825,000	RRB
Purchase DB2, Project Management and Visual Studio.Net tools	10-1-04	5-31-05	165	\$909,800	RRB
Training of staff	10-1-04	9-30-05	251	\$258,000	RRB
Migration to relational database	10-1-05	9-30-06	250	\$1,740,000	RRB
Purchase productivity tools and Visual Studio.Net	10-1-05	2-28-06	100	\$441,800	RRB

Cost and Schedule Goals: Original Baseline for a Phase/Segment/Module of Project (Investment)					
Description of Milestone	Schedule			Planned Cost	Funding Agency
	Start Date	End Date	Duration (in days)		
Training of additional staff on tools	10-1-05	9-30-06	250	\$654,000	RRB
RFP for consultant to plan normalization of relational database, evaluate responses , award contract to consultant	10-1-06	2-28-07	101		RRB
Research/Assess Normalization	3-1-07	9-30-07	149	\$600,000	RRB
Purchase Database Administration for DB2 Suite and Visual Studio.Net	10-1-06	1-31-07	82	\$339,800	RRB
Train additional staff on tools	10-1-06	4-30-07	144	\$210,000	RRB
Completion date: 9-30-07				Total cost estimate at completion: \$5,978,400	

I.H.3. Proposed baseline/current baseline (applicable only if OMB-approved the changes)

Identify in this section a proposed change to the original or current baseline or an OMB-approved baseline change. What are the new cost and schedule goals for the phase or segment/module (e.g., what are the major investment milestones or events; when will each occur; and what is the estimated cost to accomplish each one)? Also identify the funding agency for each milestone or event if this is a multi-agency investment. If this is a new investment in the FY 2005 budget year, this section will be blank for your initial submission.

Not Applicable to RRB at this time.

Cost and Schedule Goals: Proposed or Current (OMB-Approved) Baseline for a Phase/Segment/Module of Project (Investment)					
Description of Milestone	Schedule			Planned Cost	Funding Agency
	Start Date	End Date	Duration (in days)		
1.					
2.					
3.					
Completion date:				Total cost estimate at completion:	

I.H.4 Actual performance and variance from OMB-approved baseline (original or current)

I.H.4(A) This section is always filled in to reflect current status of the investment. It compares the OMB approved baseline and actual results for this phase, segment, or module of the investment. Show for each major investment milestones or events you planned (scheduled) to accomplish and the cost and what work was actually done and the cost. If the project is in the operational or steady state phase complete one line on the chart for each year. For these projects complete paragraphs C, D, F and G as appropriate. If this is a new investment in the FY 2005 budget year, this will be blank for your initial submission. OMB may ask for latest information during the budget review process.

Not Applicable to RRB at this time

Comparison of OMB-Approved Baseline and Actual Outcome for Phase/Segment/Module of a Project (Investment)									
Description of Milestone	OMB-Approved Baseline					Actual Outcome			
	Schedule			Planned Cost	Funding Agency	Schedule		Percent Complete	Actual Cost
	Start Date	End Date	Duration (in days)			Start Date	End Date		
1.									
2.									
3.									
Completion date: OMB-approved baseline:						Estimated completion date:			
Total cost: OMB-approved baseline:						Estimate at completion:			

I.H.4(B) Provide the following investment summary information from your EVMS data (as of date):

I.H.4(B.1)Show the budgeted (planned) cost of work scheduled (BCWS): \$

I.H.4(B.2)Show budgeted (planned) cost of work actually performed (BCWP): \$

I.H.4(B.3)Show the actual cost of work performed (ACWP): \$

I.H.4(B.4) Provide a performance curve graph plotting BCWS, BCWP and ACWP on a monthly basis from inception of this phase or segment/module through the latest report. In addition, plot the ACWP curve to the estimated cost at completion (EAC) value, and provide the following EVMS variance analysis.

Project (Investment) Summary (Cumulative)	Value
Cost Variance = (BCWP-ACWP) =	
Cost Variance % = (CV/BCWP) x 100%	
Cost Performance Index (CPI) = (BCWP/ACWP)	
Schedule Variance = (BCWP-BCWS) =	
Schedule Variance % = (SV/BCWS) x 100%	
Schedule Performance Index (SPI) = (BCWP/BCWS)	
Two independent Estimates at Completion (EAC) = ACWPcum + (Performance Factor (PF) X (BAC minus BCWPcum)), where PF 1 = 1/CPI, and PF2 = 1/(CPI X SPI). =	
Variance at Completion (VAC) = (BAC minus EAC) for both EACs above =	
Variance at Completion % = (VAC/BAC) x 100% for both EACs above =	
Estimated Cost to Complete (ETC)=	
Expected Completion Date =	

Definitions for Earned Value Management System:

- ACWP - Actual Cost of Work Performed - What you paid.
- BAC - Budget At Completion - The baseline (planned) budget for the investment.
- BCWP - Budgeted Cost for Work Performed - The earned value.
- BOWS - Budgeted Cost for Work Scheduled - The planned costs.
- CPI - Cost Performance Index - The ratio of the budgeted to actual cost of work performed.
- CV - Cost Variance - The difference between planned and actual cost of work performed.
- EAC - Estimate At Completion - The latest estimated cost at completion.
- ETC - Estimate to Completion - Funds needed to complete the investment.
- PF - Performance Factor - The cost to earn a dollar of value, or ACWP/BCWP, or 1/CPI.
- SPI - Schedule Performance Index - The percent of the investment that has been completed.
- SV - Schedule Variance - The variance between the actual and planned schedules.
- VAC - Variance at Completion - The variance between the baseline and actual budget at completion.

I.H.4(C) If cost and/or schedule variance are a negative 10 percent or more at the time of this report or EAC is projected to be 10 percent or more, explain the reason(s) for the variance(s).

I.H.4(D) Provide performance variance. Explain based on work accomplished to date, whether or not you still expect to achieve your performance goals. If not, explain the reasons for the variance. For steady state projects, in addition to a discussion on whether or not the system is meeting the program objectives, discuss whether the needs of the owners and users are still being met.

I.H.4(E) For investments using EVMS, discuss the contractor, government, and at least the two EAC index formulas in I.H.4.B, current estimates at completion. Explain the differences and the IPT's selected EAC for budgeting purposes. This paragraph is not applicable to operations/steady state investments.

I.H.4(F) Discuss the corrective actions that will be taken to correct the variances, the risk associated with the actions, and how close the planned actions will bring the investment to the original baseline. Define proposed baseline changes, if necessary.

I.H.4(G) If the investment cost, schedule or performance variances are 10% or greater, has the Agency Head concurred in the need to continue the program at the new baseline?
 Yes _____ No _____

Exhibit 300: Part II: Additional Business Case Criteria for Information Technology

II. A. Enterprise Architecture

In order to successfully address this area of the business case and capital asset plan you must ensure that the investment is included in the agency's EA and CPIC process, and is mapped to and supports the Federal Enterprise Architecture. You must also ensure that the business case demonstrates the relationship between the investment and the business, data, application, and technology layers of the EA.

II.A.1 Business

II.A.1(A) Is this investment identified in your agency's enterprise architecture? If not, why?

Yes, the RRB's Enterprise Architecture Strategic Plan proposed several initiatives, including this one, to assist in achieving its Target Architecture. The RRB's Target Architecture is an information environment that ultimately can support 1) the interoperability of all electronic operations, 2) effective internal and external communications, and 3) an adaptive and flexible infrastructure that is proactive in addressing business needs and challenges, all with appropriate levels of security. Through a gap analysis, structural initiatives to address technology deficiencies in RRB's existing information technology environment and functional initiatives to address deficiencies of current business processes were identified. To successfully close the identified gaps, this investment is an essential foundation with which the RRB will build upon to achieve its Target Architecture.

II.A.1.(A1) Will this investment be consistent with your agency's "to be" modernization blueprint?

Yes, the RRB's infrastructure modernization "to be" blueprint is primarily to achieve an effective, efficient distributed environment that will enable the integration and transparency of data and applications, the institution of a proactive rapid response development environment and the fostering of the assessment and reengineering of processes to incorporate architectural principles such as reuse, component design and consolidation.

II.A.1(B) Was this investment approved through the EA Review Committee at your agency?

Yes, the RRB Modernization Blueprint is one of several initiatives identified in the agency's Enterprise Architecture Strategic Plan which was approved by our Architecture Review Board.

II.A.1(C) What are the major process simplification/reengineering/design projects that are required as part of this IT investment?

This investment includes a major conversion effort from a hierarchical database to a relational one. Major infrastructure modifications are required to support increased storage, enhance efficiency, and promote interoperability. The application development environment will be redesigned to support collaborative effort, reuse, componentization, and efficiency. A major metadata effort is also being submitted for funding that will support this effort, by reducing redundancy, simplifying aspects of the programming efforts. Planning for reengineering, redesign, collaborative and integration effort of our applications will begin in conjunction and utilizing information gained from this investment.

The changes this project brings to RRB's environment prepare the agency for the redesign of select applications that were developed in the 1980's and are neither easily adapted for Internet use nor lend themselves to rapid development methodologies. The result of these efforts to unify and simplify our core systems will improve interoperability and flexibility of applications, decrease the time and cost to develop and operate E-Government applications, and improve our ability to collaborate with agency partners.

II.A.1(D) What are the major organization restructuring, training, and change management projects that are required?

This initiative will transform our application development environment. It will require substantial organizational restructuring, training and change management.

We anticipate restructuring of our internal application development environment, moving us from a traditionally structured non-flexible mode of operation to a more responsive, rapid deployment mode that aligns specific types of requests with appropriate methodologies and procedures. This will be facilitated by the introduction and use of software and techniques to promote componentization, software modeling, quality control, targeted development methodologies and deployment of new project management and control software.

We anticipate using MS Project to structure, track and manage the changes associated with this investment. The training will be staggered and provided when needed to allow practical hands on applications for software tools. We plan to offer project management training prior to project inception and appropriate for the level of involvement. Training in communication skills and small group dynamics will be provided as well. Organizational restructuring will include moving from stove-piped specialized skill base reflected in unique sections dedicated to specific applications and systems to creating a shared programmer pool using matrix management techniques when appropriate. We plan initially to start with a smaller programmer pool, training individuals to respond to a wider base of systems, utilizing core skills applicable across applications. We will slowly broaden the pool as programmers and analyst are trained, adjust to the changes, and we evaluate and modify the plan based on feedback and results compared to pre-determined metrics.

II.A.1(E)

Please list all the Lines of Business and Sub-Functions from the FEA Business Reference Model that this IT investment supports. The primary BRM mapping for this initiative should have been identified with the last six digits of the unique project (investment) identifier in section 53.8. For a list of the BRM Lines of Business and Sub-Functions, as well as guidance on mapping to the BRM, please see www.omb.gov. (Note: The Services for Citizens area and the Mode of Delivery area should be thought of collectively. If you identified your primary line of business/sub-function in section 53.8 as a Service for Citizen or a Mode of Delivery, at a minimum you should identify the corresponding Mode of Delivery/Service for Citizen that applies in this section).

Line of Business	Sub-function
Services to Citizens	
Income Security	General Retirement and Disability Unemployment Compensation Survivor Compensation
Health	Health Care Services
Mode of Delivery	
Federal Financial Assistance	Direct Transfer to Individuals
Knowledge Creation and Management	Research and Development General Purpose Data and Statistics Advising and Consulting
Public Goods Creation and Management	Information Infrastructure Management
Support Delivery of Services	
Public Affairs	Customer Services Official Information Dissemination
Planning and Resource Allocation	Budget Formulation Capital Planning Enterprise Architecture Strategic Planning Budget Execution
Controls and Oversight	Program Evaluation Program Monitoring
Internal Risk Mgmt and Mitigation	Contingency Planning Continuity of Operations Service Recovery

Line of Business	Sub-function
Management of Government Resources	
Supply Chain Management	Goods Acquisition Inventory Control Logistics Management Services Acquisition
Financial Management	Asset and Liability Management
Administrative Management	Facilities, Fleet and Equipment Management Help Desk Services Security Management
Information and Technology Management	System Development Lifecycle/Change Management System Maintenance IT Infrastructure Maintenance IT Security Record Retention Information Management

II.A.2 Data

II.A.2(A) What types of data will be used in this investment? Examples of data types are health data, geospatial data, natural resource data, etc.

Demographic

II.A.2(B) Does the data needed for this investment already exist at the Federal, State, or Local level? If so, what are your plans to gain access to that data?

All required data already exists within the RRB. No additional data from outside the RRB is needed.

II.A.2(C) Are there legal reasons why this data cannot be transferred? If so, what are they and did you address them in the barriers and risk sections above?

This data will be housed in RRB files and its usage will remain internal to the RRB.

II.A.2(D) If this initiative processes spatial data, identify planned investments for spatial data and demonstrate how the agency ensures compliance with the Federal Geographic Data Committee standards required by OMB Circular A-16.

Not applicable

II.A.2(E) If this activity involves the acquisition, handling or storage of information that will be disseminated to the public or used to support information that will be disseminated to the public, explain how it will comply with your agency's Information Quality guidelines (section 515 requirements)?

Not applicable

II.A.2(F) Managing business information means maintaining its authenticity, reliability, integrity, and usability and providing for its appropriate disposition. Address how the system will manage the business information (records) that it will contain throughout the information life cycle.

Business information is carefully managed in the legacy systems. The rules for each life cycle stage will be promoted to the modernized system.

II.A.3 Applications, Components, and Technology

II.A.3(A) Discuss this major investment in relationship to the Service Component Reference Model Section of the FEA. Include a discussion of the components included in this major IT investment (e.g., knowledge management, content management, customer relationship management, etc). For detailed guidance regarding components, please refer to <http://www.feapmo.gov> and the SRM Release Document.

The RRB's Modernization Blueprint Initiative has a direct relationship to the Support Services and Digital Asset Service components of the Services Component Reference Model. This initiative's primary goal is the internal reengineering of our databases and the restructuring of our system development environment. Applicable specific domains within the FEA Service Component Reference Models (SRM) and relationships follow:

- Back Office Services Domain\Human Resources\Education & Training Component
- Back Office Services Domain \ Development & Integration \ Legacy Integration Component
- Back Office Services Domain \ Development & Integration \ Enterprise Application Integration Component
- Back Office Services Domain \ Development & Integration \ Data Integration Component
- Human Capital \ Workforce Management \ Skill Management Component

II.A.3(B) Are all of the hardware, applications, components, and web technology requirements for this investment included in the Agency EA Technical Reference Model? If not, please explain.

Yes, all the hardware, applications and component requirements for the RRB's Modernization Blueprint Initiative are included in the RRB's Enterprise Portfolio of Products and Standards.

II.A.3(C) Discuss this major IT investment in relationship to the Technical Reference Model section of the FEA. Identify each Service Area, Service Category, Service Standard, and Service Specification that collectively describes the technology supporting the major IT investment. For detailed guidance regarding the FEA TRM, please refer to <http://www.feapmo.gov>.

The RRB's Modernization Blueprint Initiative establishes relationships with two service categories of the Service Platform and Infrastructure Service Area: Database/Storage and Software Engineering. For the Database Storage Category, the Database Standards that are being used for this effort are DB2 and SQL Server. For the Software Engineering Category, The Integrated Development Environment Standard, which will be used in this initiative, is Visual Studio.net.

II.A.3(D) Will the application leverage existing components and/or applications across the Government (i.e., FirstGov, Pay.Gov, etc). If so, please describe.

Not applicable

II.A.3(E) Financial Management Systems and Projects, as indicated in Part One, must be mapped to the agency's financial management system inventory provided annually to OMB. Please identify the system name(s) and system acronym(s) as reported in the most recent systems inventory update required by Circular A-11 section 52.4.

Not applicable

II. B. Security and Privacy

In order to successfully address this area of the business case, each question below must be answered at the investment (system/application) level, not at a program or agency level. Simply referring to security plans or other documents is not an acceptable response. For IT investments under development, security planning must proceed in parallel with the development of the system to ensure that IT security requirements and costs for the lifecycle of the investment are identified and validated. All IT investments must have up-to-date security plans and be fully certified and accredited prior to becoming operational. Anything short of a full certification and accreditation indicates that identified IT security weaknesses remain and need to be remedied and is therefore not adequate to ensure funding for the investment. Additionally, to ensure that requests for increased IT security funding are appropriately addressed and prioritized, the agency must identify: 1) current costs; 2) current IT security performance gaps; and 3) how the funding request will close the performance gaps. This information must be provided to OMB through the agencies' plan of action and milestone developed for the system and tied to the IT business case through the unique project (investment) identifier.

In addition, agencies must demonstrate that they have fully considered privacy in the context of this investment. Agencies must comply with Section 208 of the E-government Act and forthcoming OMB implementing guidance and, in appropriate circumstances, conduct a privacy impact assessment that evaluates the privacy risks, alternatives and protective measures implemented at each stage of the information life cycle. Agencies should utilize the guidance provided in OMB Memoranda in conducting the PIA and submit a copy, using the unique project (investment) identifier, to OMB at PIAkomb.eop.gov.

II.B.1 How is security provided and funded for this investment (e.g., by program office or by the CIO through the general support system/network)?

This project, if approved, would be funded by the CIO.

II.B.1(A) What is the total dollar amount allocated to IT security for this investment in FY 2005? Please indicate whether an increase in IT security funding is requested to remediate IT security weaknesses, specifying the amount and a general description of the weakness.

Funding for IT security has not been determined at this phase of the investment. An IT security weakness does not currently exist for this investment.

II.B.2 Please describe how the investment (system/application) meets the following security requirements of the Federal Information Security Management Act, OMB policy, and NIST guidelines:

II.B.2(A) Does the investment (system/application) have an up-to-date security plan that meets the requirements of OMB policy and NIST guidelines? What is the date of the plan?

This investment will impact the security plans for several major application systems. The security plans for those systems were last updated in July and August 2002. Security plans for these systems will be updated according to OMB policy requirements and NIST guidelines during the systems development life cycle for this investment.

II.B.2(B) Has the investment been certified and accredited (C&A)?

Note: Certification and accreditation refers to a full C&A and does not mean interim authority to operate. Additionally, specify the C&A methodology used (e.g., NIST guidelines) and the date of the last review.

Not applicable at this time.

II.B.2(C) Have the management, operational, and technical security controls been tested for effectiveness? When were most recent tests performed?

Not applicable at this time.

II.B.2(D) Have all system users been appropriately trained in the past year, including rules of behavior and consequences for violating the rules?

Not applicable at this time.

II.B.2(E) How has incident handling capability been incorporated into the system or investment, including intrusion detection monitoring and audit log reviews? Are incidents reported to DHS' FedCIRC?

Not applicable at this time.

II.B.2(F) Is the system operated by contractors either on-site or at a contractor facility? If yes, does any such contract include specific security requirements required by law and policy? How are contractor security procedures monitored, verified, and validated by the agency?

Not applicable at this time.

II.B.3 How does the agency ensure the effective use of security controls and authentication tools to protect privacy for those systems that promote or permit public access?

Not applicable at this time.

II.B.4 How does the agency ensure that the handling of personal information is consistent with relevant government-wide and agency policies?

Not applicable at this time.

II.B.5 If this is a new or significantly altered investment involving information in identifiable form collected from or about members of the public, has a Privacy Impact Assessment (PIA) for this investment been provided to OMB at PIAgomb.eop.gov with the investment's unique project (investment) identifier?

While this investment indirectly affects information subject to the Privacy Act, it is our judgment that it is not of a nature that calls for the completion of a Privacy Impact Assessment.

II. C. Government Paperwork Elimination Act (GPEA)

II.C.1 If this investment supports electronic transactions or record-keeping that is covered by GPEA, briefly describe the transaction or record-keeping functions and how this investment relates to your agency's GPEA plan.

This section is not applicable to this initiative.

This investment is not directly affected by GPEA; nor does it directly affect the RRB's GPEA initiatives.

II.C.2 What is the date of electronic conversion from your GPEA plan?

II.C.3 Identify any OMB Paperwork Reduction Act (PRA) control numbers from information collections that are tied to this investment.